FOUNDED IN 1856

RAILWAY AGE

AUGUST 6, 1949

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GREATER *All-weather* SAFETY
FOR THE TRAINMAN

with this GRIP

WINE

THE WINE
RAILWAY APPLIANCE CO.
TOLEDO, OHIO

"SAFE GRIP" LADDERS
AND HANDHOLDS

IMMEDIATE . . .

SAVINGS WITH Chilled Car Wheels

- Immediate and substantial savings in wheel investment.
- Immediate reduction in replacement and wheel shop costs.
- Immediate delivery from 26 strategically located member plants—reducing inventory requirements.
- Improved design—assuring greater safety, strength and durability.

★ ★ ★

Details of these economies can be obtained from any member of the Association of Manufacturers of Chilled Car Wheels.

Remember—Over 65% of the nation's railroad freight is carried on Chilled Car Wheels.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 NORTH SACRAMENTO BOULEVARD, CHICAGO 12, ILL.

American Car & Foundry Co. • Canadian Car & Foundry Co. • Griffin Wheel Co.
Marshall Car Wheel & Foundry Co. • New York Car Wheel Co. • Pullman-Standard Car Mfg. Co.
Southern Wheel (American Brake Shoe Co.)

7674

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year. U. S. and Canada. Single copies, 50 cents each. Vol. 127. No. 6.

MINER
CLASS A-121-X
FRICTION DRAFT GEAR

for
DIESEL LOCOMOTIVES

W. H. MINER INC. - CHICAGO

Pullman-Standard

When the Power Track Cribber goes to work, the number of cribs it can skeletonize per day can be measured in *rail lengths* compared with *track feet* by ordinary means. It saves both time and labor.

It operates effectively in all types of ballast, in all track conditions, day or night . . . travels to and from location under its own power. Lateral wheels and self-contained power jacks permit removal from track in less than five minutes.

On hundreds of miles of track, these machines have paid economy dividends to many progressive railroads. Write for analysis comparing *power* cribbing costs with the cost of gang operations under varied track, ballast, and traffic conditions.

Power Ballaster Division

79 East Adams Street, Chicago 3, Illinois

Pullman-Standard

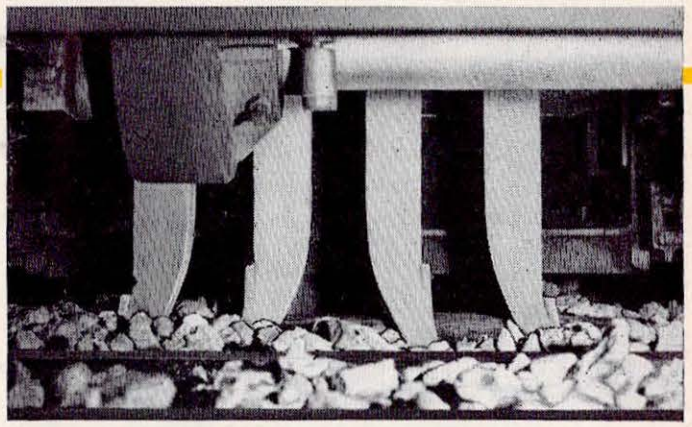
CAR MANUFACTURING COMPANY

Power Track Cribber

CUTS COST OF BALLAST REMOVAL!

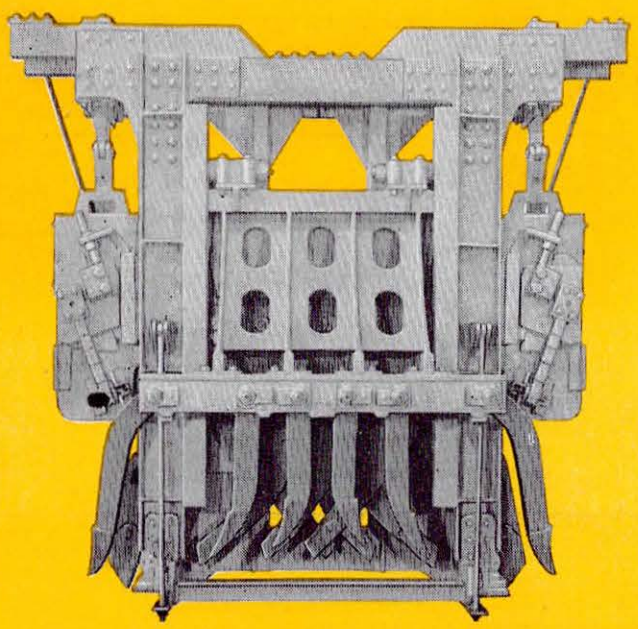
HOW TO MAKE BIG SAVINGS AND GET BETTER WORK DONE FASTER

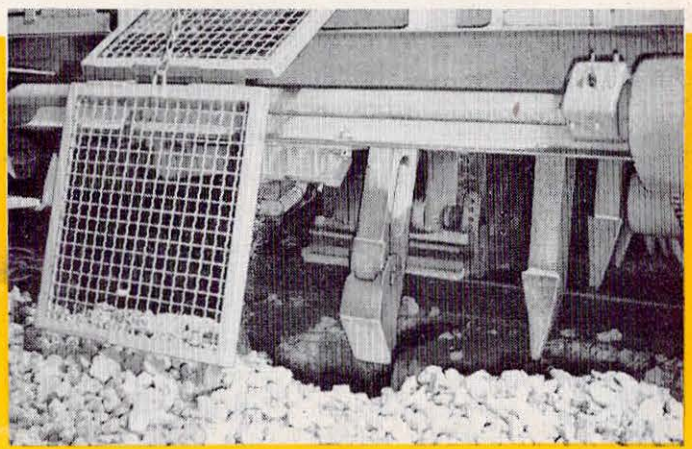
Tremendous power, plus a more efficient digging mechanism, enables these machines to out-perform any other existing method of ballast removal—and at much less cost per crib. Multiple diggers, controlled by one operator, replace many manually operated tools and do a more uniform job. In mechanizing track maintenance, this Power Track Cribber pays off. Performance records prove this.



Impact bars loosen ballast. A view along the track under a Power Track Cribber, showing impact bars which work as "picks" in crib ahead of the digger bars. Thus, ballast is pre-loosened to facilitate action of the diggers.

Machine Power Saves Man Power

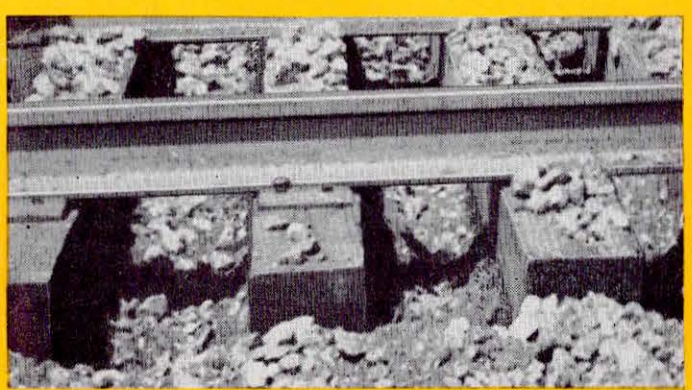




This view shows digger bars in position between ties, with pointed "impact" bars preparing the crib ahead. Diggers contact the ballast serially, moving it progressively from track center to ends of crib. Depth of digging may be varied for different track conditions and heights of rail.

DROP-HEAD OPERATES WITHOUT REACTION ON CRIBBER CHASSIS

No snubbers, springs, or shock-absorbing devices are needed to save wear and tear on the machine. 6,200-pound drop-head is power-lifted —falls by gravity. The entire force of the falling head is spent in breaking up the ballast. This is the only cribber employing this pile-driver principle.



Ready for resurfacing. Crib thoroughly cleaned out to the desired uniform depth.

Everything for finer performance . . .

shorter.. overall

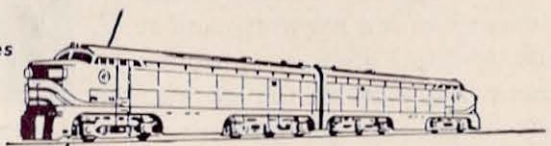
Another point of Superiority of Fairbanks-Morse Consolidation Locomotives

More pay load per length of train, more passenger cars in the station, more freight cars at the loading ramp or on the siding—that's what you can plan on with "C" Line Locomotives.

This is another point to remember about Consolidation Locomotives. All units, regardless of horsepower, are the same short length — 56′ 3″. All units, whether 1600, 2000 or 2400 hp. are built on the same car body and have the same overall dimensions.

The men who make up the trains will well appreciate this uniformity and the reduction in lengths: the men who watch revenues and operating costs will likewise appreciate the dollars-and-cents benefits. Now is the time to discuss them with our representatives. Fairbanks, Morse & Co., Chicago 5, Illinois.

When it comes to locomotives



FAIRBANKS-MORSE,

a name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • PUMPS • SCALES • MOTORS • GENERATORS
STOKERS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT • MAGNETOS

Here are a few typical "C" Line Locomotives for passenger and/or freight service.

HP.		
3200	**Total Length—112′ 6″:** Two 1600 hp. units, available with nine gear ratios, water facilities and dynamic braking, as desired.	
4000	**Total Length—112′ 6″:** Two 2000 hp. units, available with nine gear ratios, water facilities and dynamic braking, as desired.	
4800	**Total Length—168′ 9″:** Three 1600 hp. units, available with nine gear ratios, water facilities and dynamic braking, as desired.	
4800	**Total Length—112′ 6″:** Two 2400 hp. units, available with nine gear ratios, water facilities and dynamic braking, as desired.	
6000	**Total Length—168′ 9″:** Three 2000 hp. units, available with nine gear ratios, water facilities and dynamic braking, as desired.	
6400	**Total Length—225′ 0″:** Four 1600 hp. units, available with nine gear ratios, water facilities and dynamic braking, as desired.	
7200	**Total Length—168′ 9″:** Three 2400 hp. units, available with nine gear ratios, water facilities and dynamic braking, as desired.	

"Built-in Fire Insurance..."

KOPPERS FIRE-RETARDANT WOOD

THE effectiveness of Koppers Fire-Retardant Wood has been dramatically demonstrated under actual fire conditions as well as in tests of the Underwriters' Laboratories Incorporated.

In 1946, an explosion at an Ohio magnesium foundry tossed burning magnesium to the top of a fume hood made of Transite on a Koppers Fire-Retardant Wood framework. Although the magnesium burned for ten minutes at about 4000°F., the fire did not spread, and there was no charring beyond the area in direct contact with molten metal. No replacement of Koppers Fire-Retardant Wood because of fire damage was required.

Koppers Fire-Retardant Wood pays dividends even if you never have a fire. To all the advantages of wood . . . its easy workability, availability, decorative value, economy, re-use value . . . are added resistance to decay and termite attack as well as resistance to fire. Yet the odorless Koppers treatment does not harm the color or paintability of the wood. Where treated wood is exposed to leaching, Koppers Flame-Resistant Sealer may be used to seal salts in and moisture out, and maintain a high degree of protection indefinitely.

Koppers Fire-Retardant Wood is ideally suited for the structural members of railroad engine houses, bridges, tunnel linings and for floors, roof trusses, roofing, sheathing and similar applications. Send for a free copy of the booklet, **Koppers Fire-Retardant Wood,** for more complete information about how Koppers Fire-Retardant Wood can protect your buildings.

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

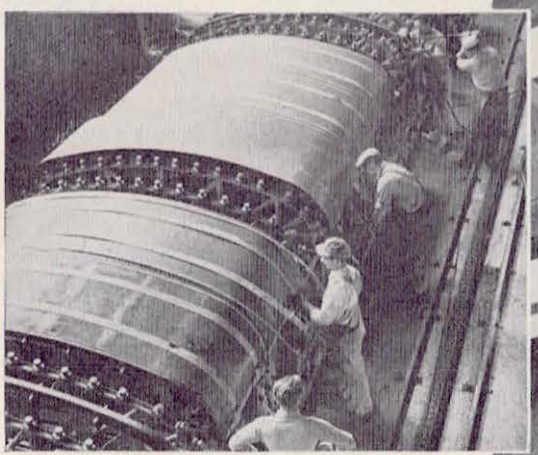
KOPPERS **PRESSURE-TREATED WOOD**

U·S·S COR-TEN lends itself readily to mass production methods

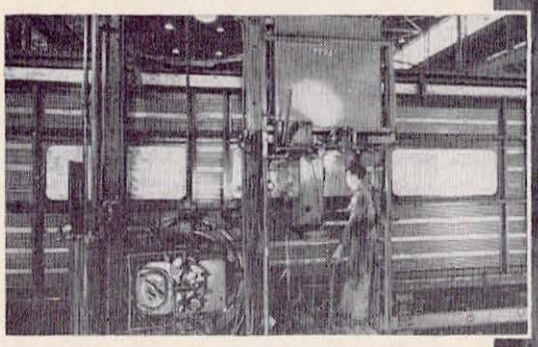
...another reason why

"COR-TEN Equipment" HAS COME TO MEAN

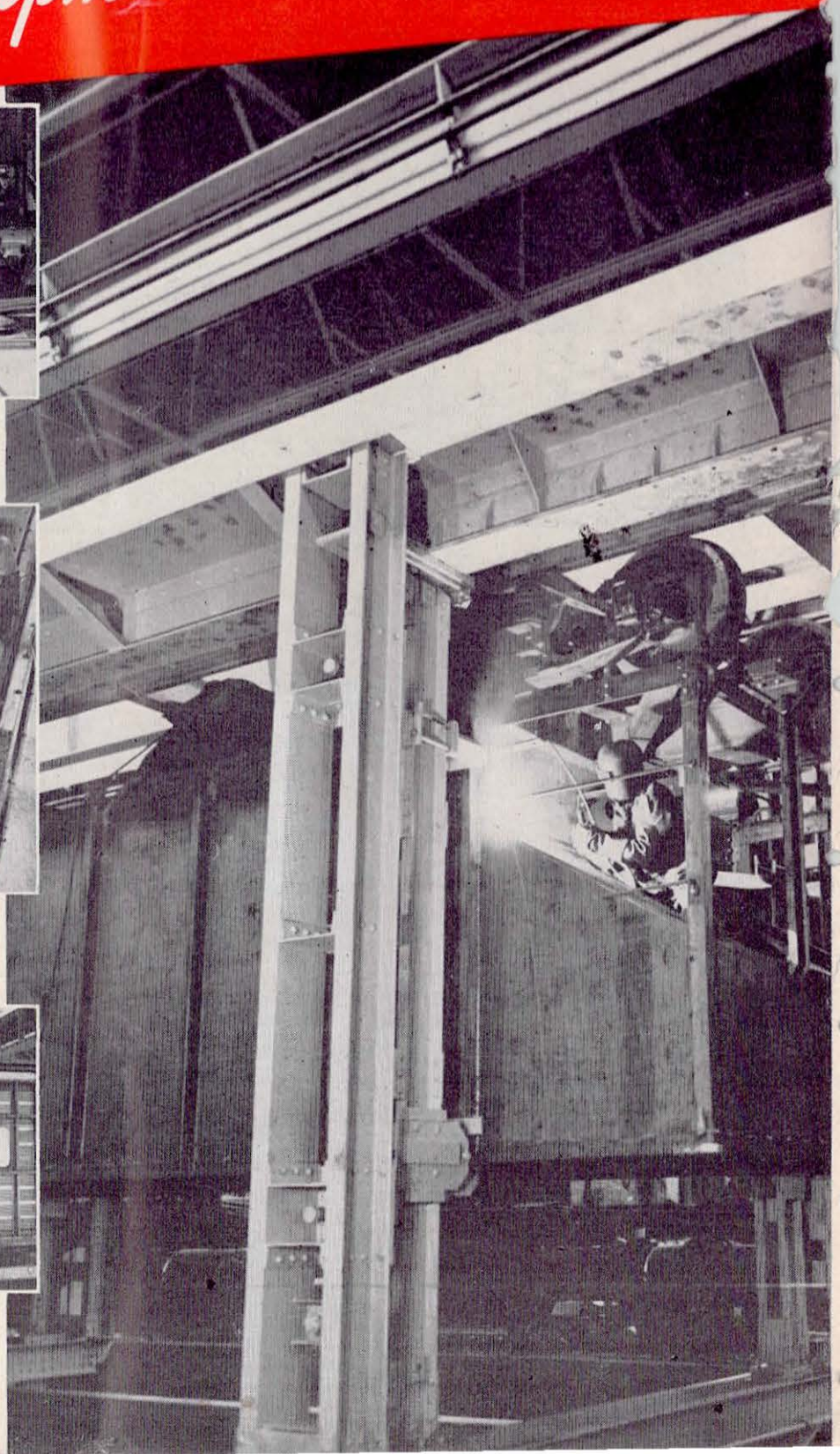
MASS PRODUCING all-welded gondolas in the car shops of the Milwaukee Road. From five feeder lines, sub-assemblies move steadily forward to arrive at two main assembly lines for final welding as shown here.



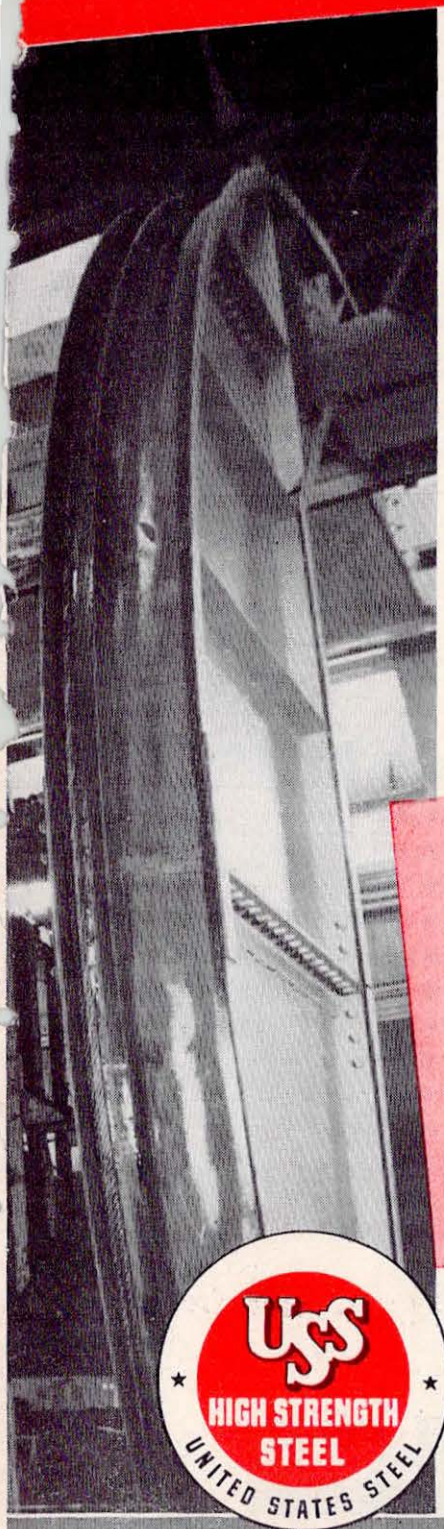
WELDING A PASSENGER CAR ROOF into one integral unit takes slightly over 2 hours at Pullman-Standard. The welding fixture, 120 ft. long is a double unit so arranged that while one roof is being welded another is being fitted up as shown.



PASSENGER CAR SIDE FRAMES and side sheets are welded together on automatic spot-welding machine designed by Pullman-Standard. Machine covers all surfaces, makes 7000 spot welds in 3 hours.



"the best in lightweight construction"



THE highly successful performance of U·S·S COR-TEN in the quantity production of both freight and passenger cars is due to an important and outstanding quality of this premier high strength steel—its *uniformity*.

The fact that COR-TEN's physical, chemical and metallurgical properties are rigidly controlled, results in its consistent and uniform behavior in all phases of fabrication—in cold forming, hot pressing, gas cutting and the various methods of welding.

This makes it possible in working with COR-TEN to set up routine fabricating and assembly procedures that not only minimize the time and effort required but that can be depended upon to produce high quality results.

The superior workability of U·S·S COR-TEN and particularly its excellent and uniform welding properties have been taken advantage of by those car builders and railroad car shops that have made the biggest strides in applying high-speed welding to mass carbuilding.

For example, Pullman Standard by employing the most modern spot- and arc-welding equipment, built lightweight welded box cars on a production line basis. Today they also mass produce streamlined passenger cars—spot-welding an entire car roof in one integral unit in slightly more than 2 hours . . . and 2 entire car sides in slightly over 3 hours.

American Car & Foundry Company started using COR-TEN in 1934, the year in which COR-TEN was introduced, and have been building cars with this pioneer high strength steel ever since. As illustrated on the large picture at the left, ACF has developed a mass-production set-up for the assembly of railway cars. All large sections are fitted into position as completely welded sub-assemblies, where they are held temporarily by tack welds until they are finish-welded in the rotating positioners. Because COR-TEN welds easily, this assembly process is quick and efficient.

The Milwaukee Road initiated in its shops mass-production methods for speeding up the fabrication of 50-ton all-welded box cars. Using heavy spot-welding and arc-welding equipment and simplified assemblies they are now turning them out at the rate of 10 per day.

U·S·S COR-TEN is being used in similar operations at General American, in the shops of the Pennsylvania Railroad and elsewhere—not only because it insures light weight at low cost, unusual ruggedness, and a high resistance to atmospheric corrosion, but because COR-TEN's uniform fabricating qualities keep high-speed production lines flowing smoothly.

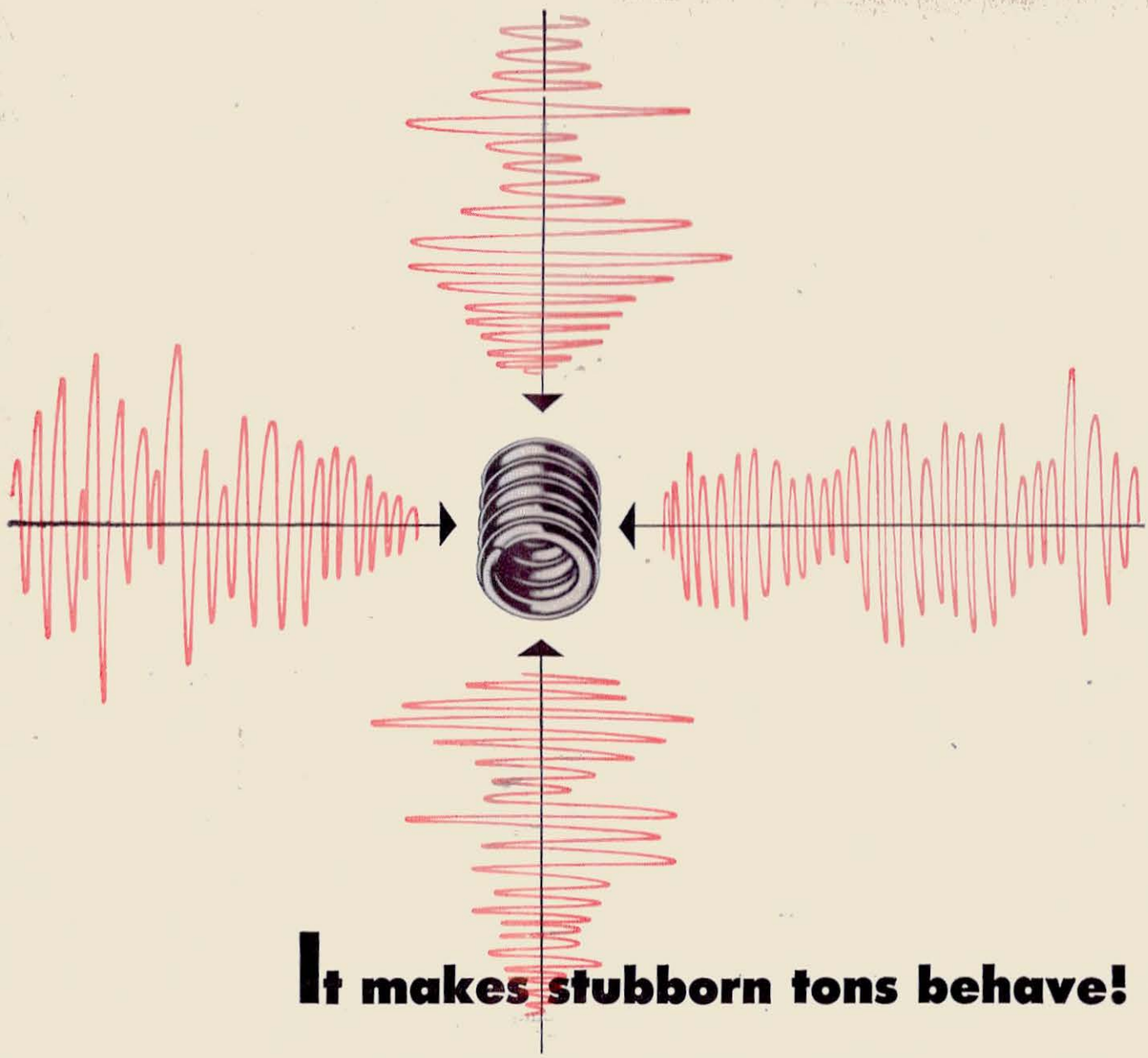
The qualities that make U·S·S COR-TEN ideally suited for mass production methods are equally advantageous to those shops building cars in smaller lots and without the benefit of special tools and equipment.

How easy it is to use COR-TEN is best illustrated by a letter received from far away Australia. Written by the Chairman of the Victorian State Railways who introduced COR-TEN in the first streamliner built below the Equator, it says:—"We are delighted with the smoothness with which the work has progressed. Our men quickly adapted themselves to the new steel. No difficulty whatever was experienced with the fabrication and assembly."

USS HIGH STRENGTH STEEL — UNITED STATES STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
UNITED STATES STEEL SUPPLY COMPANY, *Chicago, Warehouse Distributors—Coast to Coast*
UNITED STATES STEEL EXPORT COMPANY, *New York*

UNITED STATES STEEL



It makes stubborn tons behave!

You're looking at one of the eight small lateral springs that are the secret of the Scullin L-V Truck's success.

It takes destructive bounce and sidesway right out of the most unruly boxcars. Its exclusive two-way "L-V" action completely cushions and controls *both* lateral and vertical motion—without costly maintenance.

result:

SCULLIN LATERAL VERTICAL L-V CUSHIONED MOTION **TRUCKS**

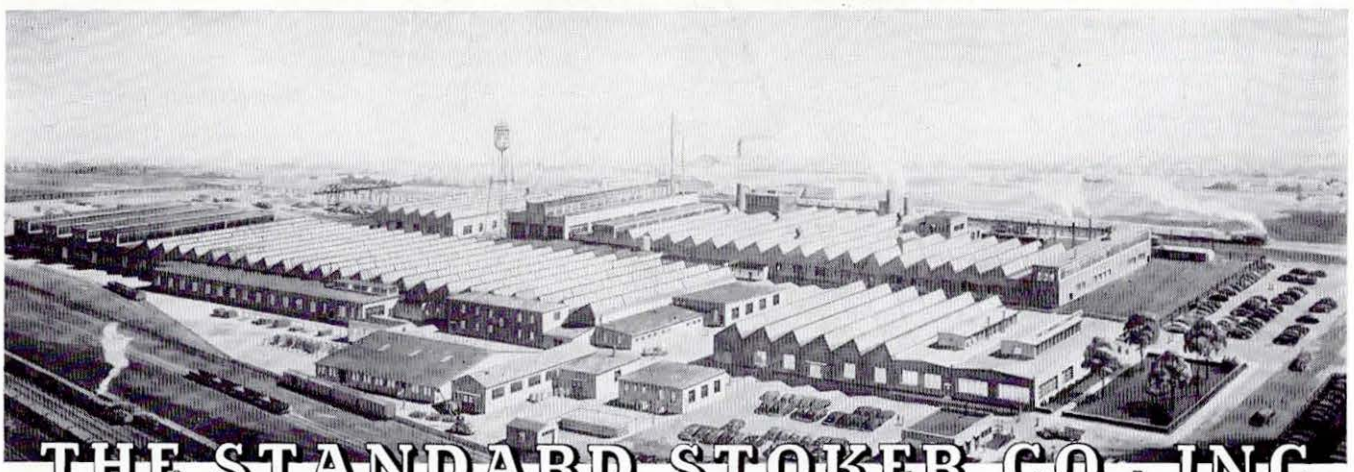
make rough rails *safe* for high-speed freight!

50 50 YEARS' PROGRESS

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

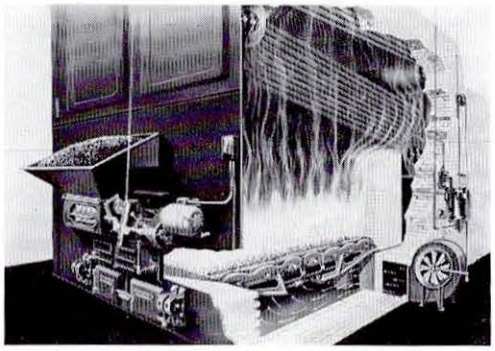
NEW YORK • CHICAGO • CLEVELAND • BALTIMORE • RICHMOND, VA. • MEXICO CITY, D. F.



THE STANDARD STOKER CO., INC.

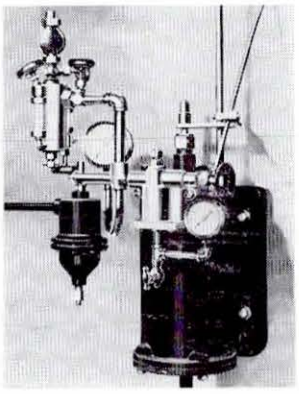
Announces 3 NEW PRODUCTS

THE CHICAGO AUTOMATIC STOKER



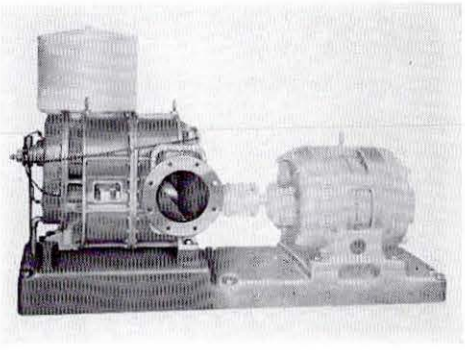
The Chicago Automatic Spreader Type Stoker is designed for industrial boilers up to 1000 HP. Many years of outstanding performance firing all types of boilers demonstrates its reliability in service. Distribution of fuel is positive and efficient—it is accomplished by adjustable distributor blades outside the furnace proper. Fly ash problems are minimized by a unique grate arrangement.

A-JACKS BOILER REGULATOR



The A-Jacks Boiler Regulator is a simple control system with 20 years of successful performance in regulating fuel-draft requirements. Uniform boiler pressures are maintained regardless of steam demands and fluctuating boiler conditions. It is of the Position Type using steam from the boiler as the actuating medium.

THE STANDARDAIRE BLOWER



The Standardaire Blower is a positive pressure blower using the axial-flow principle. It is a light-weight, high-speed, service tested unit for handling gas or air under pressure or vacuum from 20 cfm to 15,000 cfm. Important design characteristics make the Standardaire Blower suitable for a wide range of applications—serving railroads and industry in general.

We welcome your inquiries. Bulletins for the new products will be furnished upon request.

These three new products were selected only after careful study and research—they are ideally suited to our modern foundry and large facilities for precision machining.

SSC

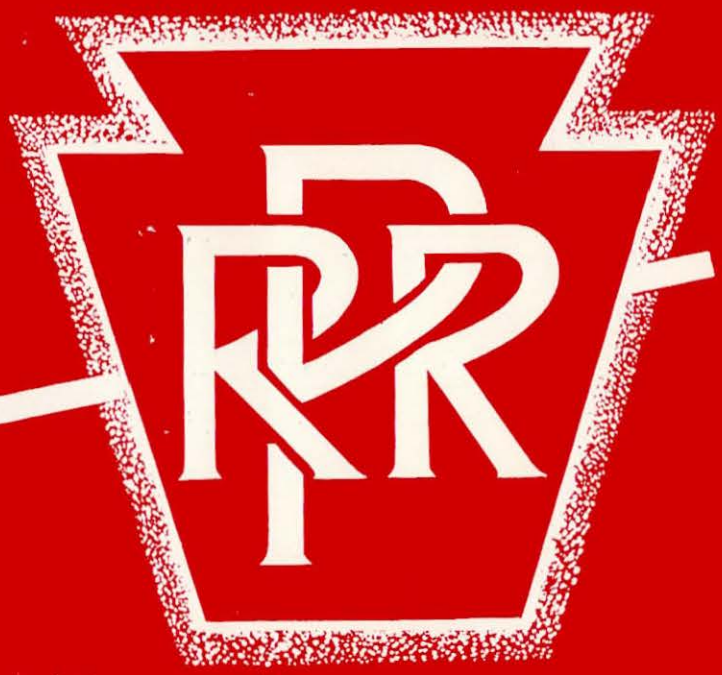
REG. U.S. PAT. OFFICE

The excellent standing of these products will be further enhanced by our experience in the manufacture of locomotive stokers and other railroad equipment.

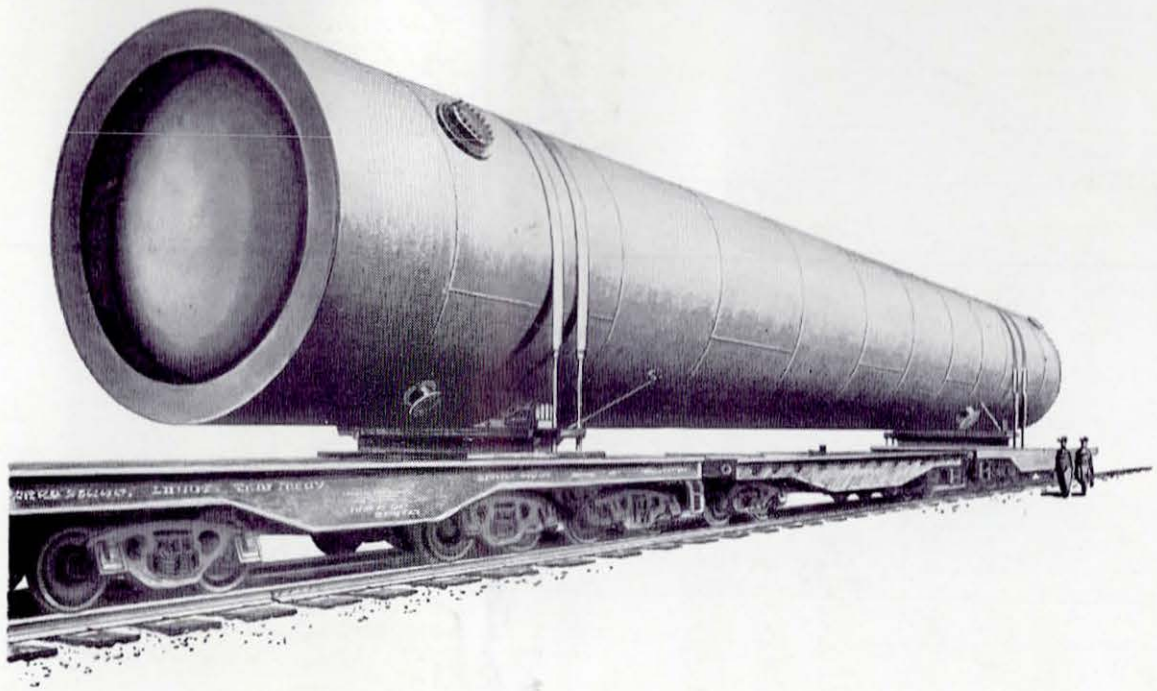
THE STANDARD STOKER COMPANY, INC.

NEW YORK • CHICAGO • ERIE • MONTREAL

Budd



On June 27th, Budd completed delivery of 50 roomette sleeping cars to the Pennsylvania Railroad. These all-stainless steel cars will become part of the consist of the Broadway Limited, The General, the "Spirit of St. Louis", The Red Arrow and other trains in the Pennsylvania's great blue ribbon fleet. The Budd Company, Philadelphia 32.



Monster on the Move!

Railroads are not called upon every day to move such large and spectacular loads as this – but they stand ready at any time to carry anything which is movable, anywhere that the tracks run.

These railroad tracks are a very special sort of highway – a steel highway on which the great bulk of the country's commerce is carried safely, surely, dependably, and at low cost.

Because we have these special highways of steel, it is possible to move all sorts of loads, in any quantity, without congesting the regular public highways, or breaking them down, or adding to the cost of building them and keeping them in repair.

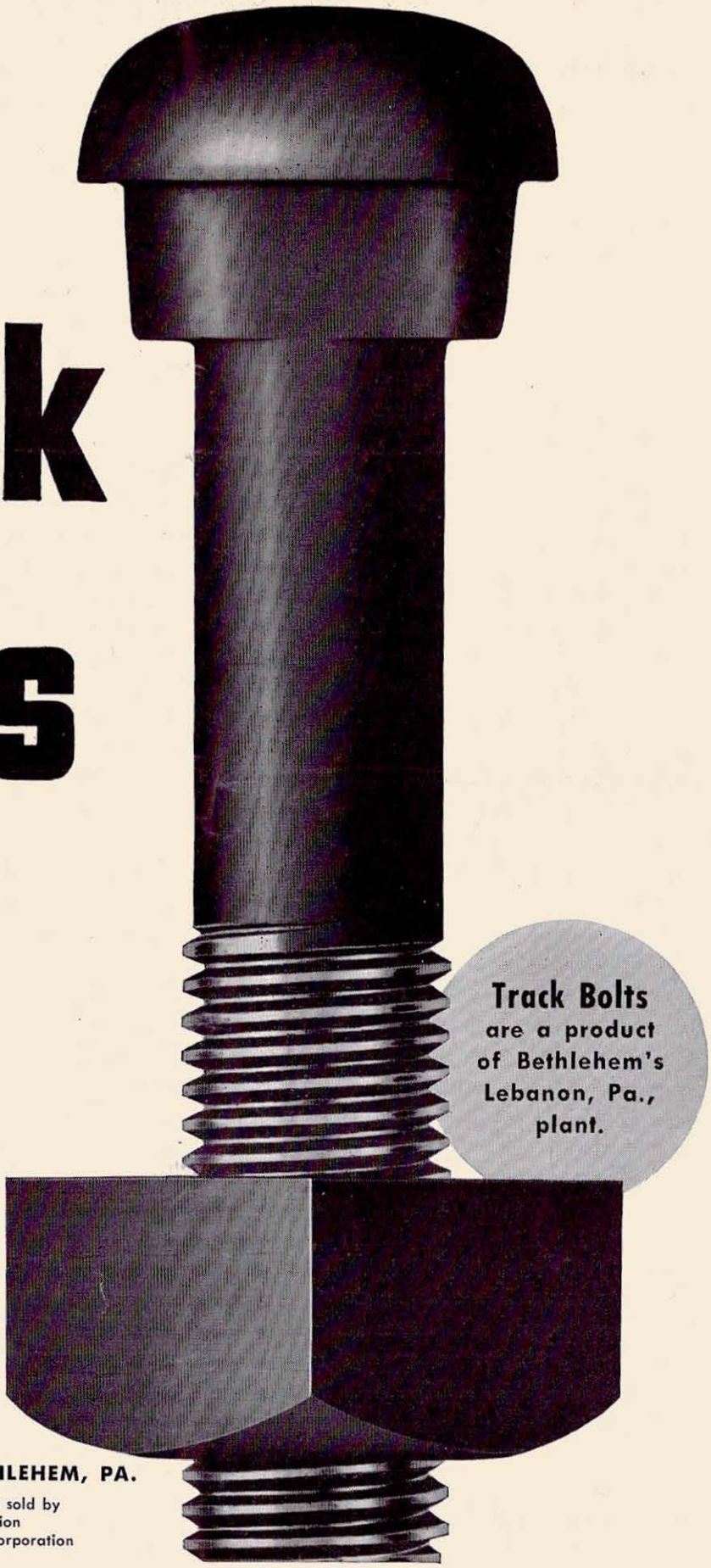
These railroad tracks were built, and are maintained, not by taxpayers' dollars but by the railroads themselves. Just on the *improvement* of these tracks and the trains which run over them, the railroads have spent during the past twenty-five years an average of more than $500,000,000 a year – of their own money. And since World War II, they have invested more than 3 billion dollars in the things which make railroads even more efficient, even safer, even more serviceable.

The result is a unique, all-purpose steel highway network – one that places no burden upon either the public treasury or the public highways – but, rather, helps to lessen the strain on the taxpayers and to reduce the congestion and burden on the highways.

ASSOCIATION OF AMERICAN RAILROADS
WASHINGTON 6, D. C.

Listen to THE RAILROAD HOUR
Every Monday evening over the ABC Network.

Track Bolts



Track Bolts are a product of Bethlehem's Lebanon, Pa., plant.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

Bethlehem supplies every type of Railroad Fastening

EXIDE-IRONCLAD BATTERIES

...for car lighting...and air-conditioning

ASSURE... long, dependable service under all operating conditions . . . even during long stops

1888...DEPENDABLE BATTERIES FOR 61 YEARS...1949

EXIDE-IRONCLAD BATTERIES *ARE DIFFERENT!*

. . . in CONSTRUCTION . . . in PERFORMANCE

They are *important differences,* for they determine battery power, performance, life and economy. Combined, they make Exide-Ironclad Batteries outstanding for car lighting and air-conditioning. Chief among those differences is the . . .

UNIQUE POSITIVE PLATE

Enlarged cutaway view of section of tube of positive plate.

This plate consists of a series of slotted tubes containing the active material. So small are these slots that, while permitting easy access of the electrolyte, they retard the active material from readily washing out or jarring loose . . . adding considerably to life of battery. All other parts are built to match the long life of the positive plate.

ALL FOUR ESSENTIALS

Exide-Ironclad Batteries have ALL FOUR of the essential characteristics that a storage battery must have to assure maximum performance in railway service—high power ability, high electrical efficiency, ruggedness and a long life with minimum maintenance. The combination of these four Exide-Ironclad characteristics assures years of day-in, day-out service with dependability and economy.

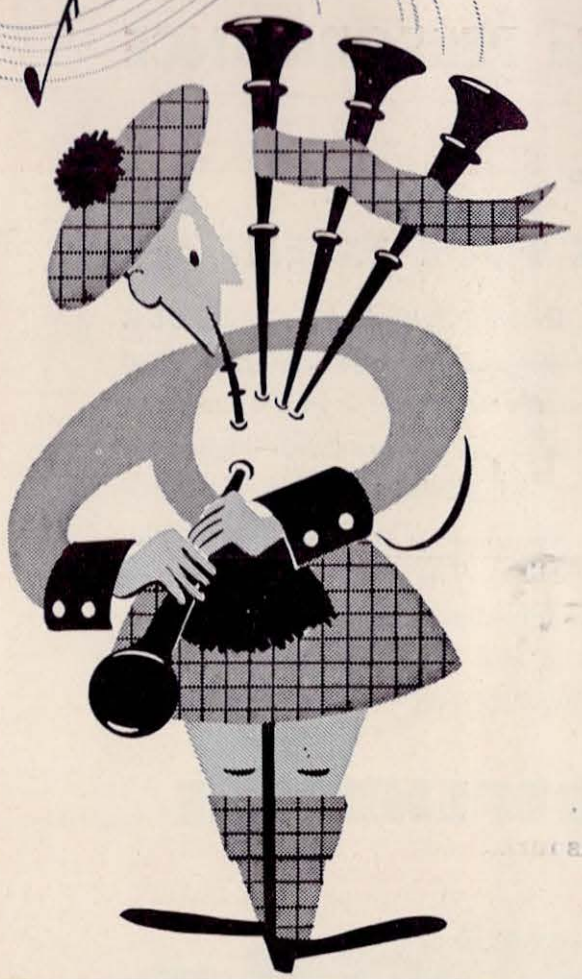
"Exide-Ironclad" *Reg. Trade-mark U. S. Pat. Off.*

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

this takes the high road

that takes the low road

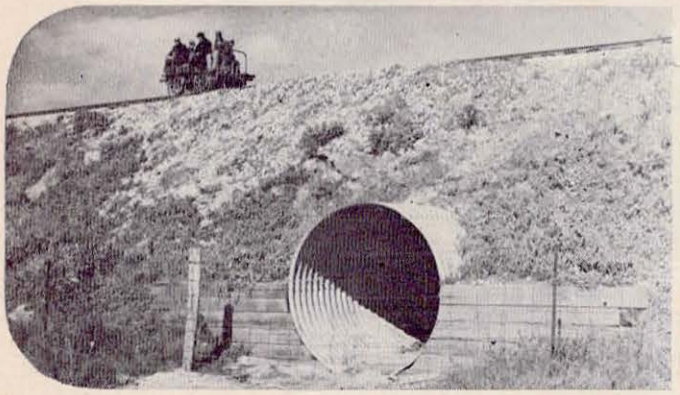


Whether it's a high fill, limited headroom or some other drainage problem, you can select an ARMCO Corrugated Metal Structure to do the job simply, economically and efficiently.

There is a type and size for every need, from a 6-inch round pipe to 24-foot MULTI-PLATE Arch. Consider plain galvanized ARMCO Pipe for normal service, PAVED-INVERT Pipe to combat erosion, or ASBESTOS-BONDED Pipe if corrosion is troublesome.

For large structures ARMCO MULTI-PLATE Pipe and Arch are shipped to the job site knocked-down ready for quick, easy field assembly. Where headroom is limited, either a standard corrugated or MULTI-PLATE PIPE-ARCH will save raising the grade or installing multiple openings.

All ARMCO Drainage Structures have a high strength-to-weight ratio. They are light in weight for easy handling, yet assure sturdy, dependable service under all conditions. Write for complete information. Armco Drainage & Metal Products, Inc., 2905 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

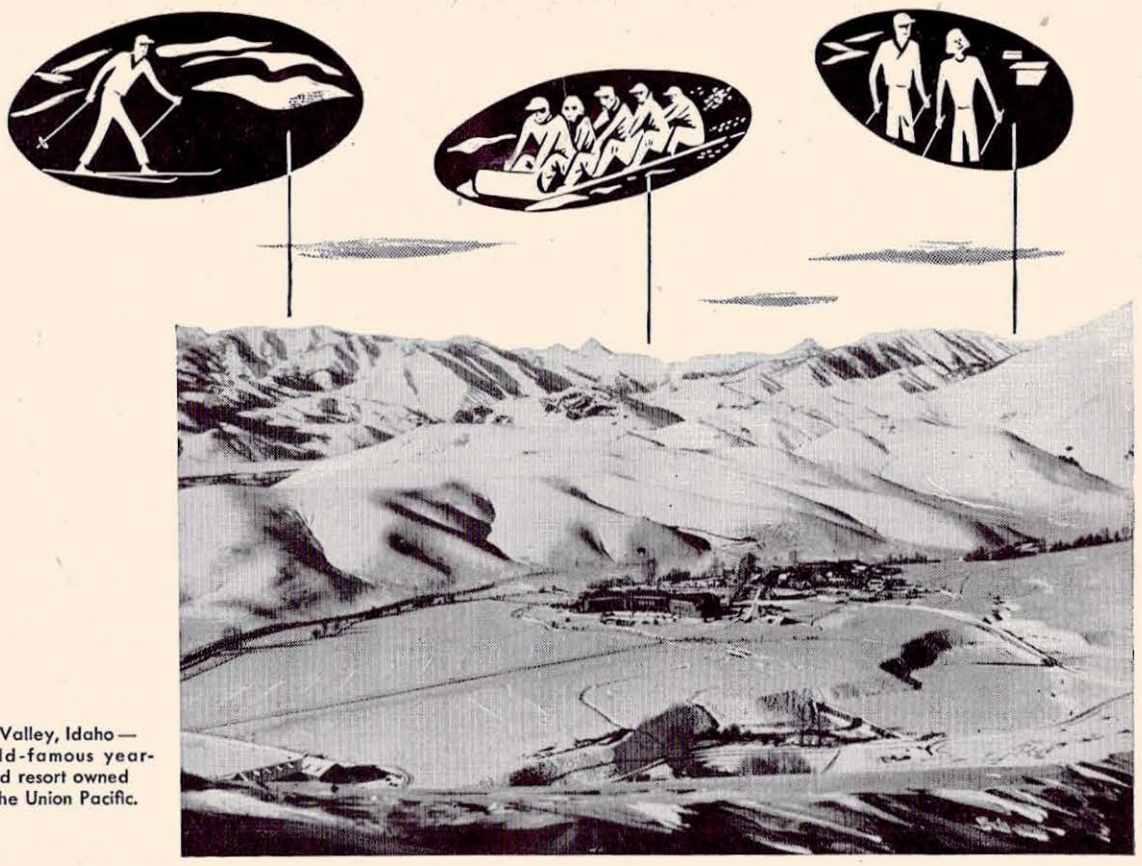


ARMCO Corrugated Metal Structures have ample strength to withstand high fills and the impact and vibration of heavy traffic.

Limited headroom is no problem for the low, wide ARMCO PIPE-ARCH. It provides fast, unrestricted runoff without raising grades.

ARMCO CORRUGATED METAL STRUCTURES

ARMCO



Sun Valley, Idaho — world-famous year-round resort owned by the Union Pacific.

100 new passenger cars for UNION PACIFIC . . . all SKF equipped!

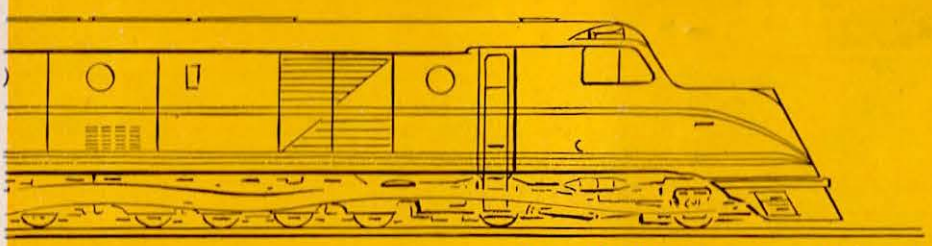
The Union Pacific has purchased 100 new passenger cars . . . . 50 built by Pullman-Standard . . . 50 built by Budd.

Since 1934, SKF has furnished journal bearings for various Union Pacific equipment: The City of Salina . . . in service 1934, and one of the first American streamliners; the first City of Los Angeles . . . deluxe streamliner in service 1936, and many others were all SKF equipped to insure outstanding performance.

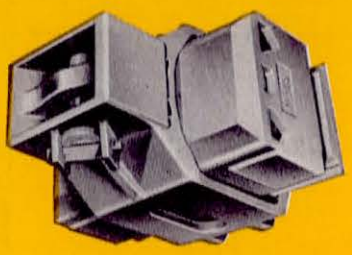
Railroaders know the advantages of reliable SKF Bearing performance . . . bearings that add extra miles to rolling stock . . . bearings that require a minimum of maintenance. Our engineers can help with your bearing applications. SKF Industries, Inc. Philadelphia 32, Pa.

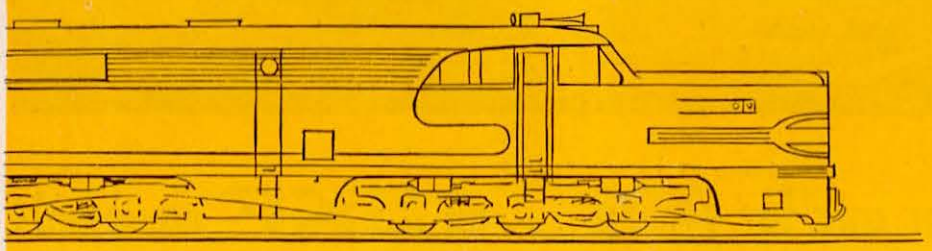
6654

PROTECT EQUIPMENT

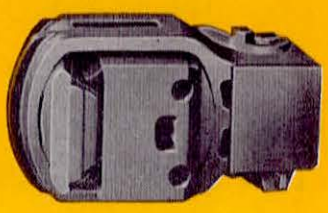


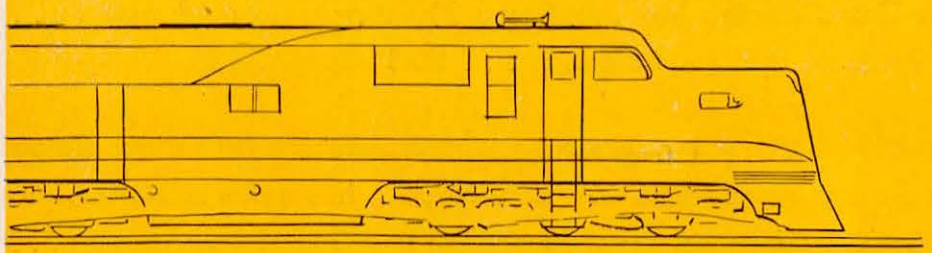
Type M-385 for extremely heavy diesel and electric freight locomotives.



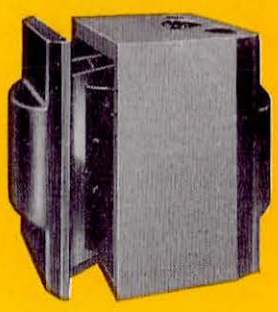


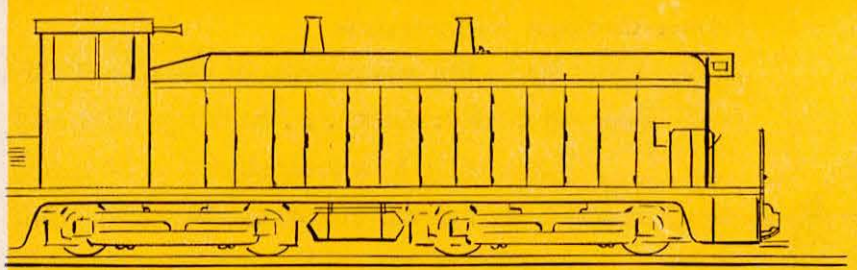
Type M-380 for heavy diesel passenger locomotives and diesel and electric freight locomotives.



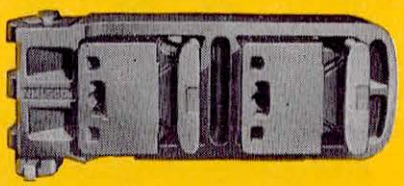


Type M-350-A for diesel passenger locomotives.





Type M-375 for diesel switching locomotives.



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AND LADINGS

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NATIONAL Rubber-Cushioned Draft Gears enable you to take advantage of the power of modern diesel and electric locomotives. That's because of:

No tendency to creep under sustained tractive force, yet continuously responsive during starting, stopping and running.

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Low maintenance costs result from the effective over-all design and long-life construction of NATIONAL Rubber-Cushioned Draft Gears. They are recognized for their important advantages in operation and maintenance. For your diesel and electric locomotives, specify NATIONAL Rubber-Cushioned Draft Gears.

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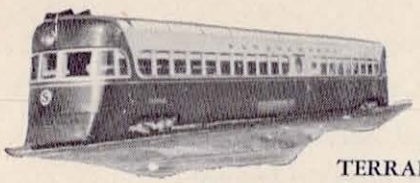
• JOURNAL BOXES

NATIONAL *Products*
FOR TRANSPORTATION AND INDUSTRY
Est. 1868

TROD ON BY 400,000 PASSENGERS...

Close-up of new Terraflex floor tile used in streamlined passenger motor car of New York, Susquehanna and Western Railroad shows little scuffing or wear after approximately 16,000 passengers a month used it for 26 months.

Terraflex, the new J-M plastic asbestos floor tile won't give up!



Here is the ideal flooring for passenger cars! It is a plastic asbestos tile called TERRAFLEX—an entirely new type decorative floor covering pioneered and developed by Johns-Manville.

Installed in the car above, Terraflex shows no signs of giving up after 26 months of service. During this time, some 400,000 people trod this car's aisles—a figure based on counts made from passenger train performance reports of the railroad.

The reason Terraflex stands up in such service is found in its remarkable characteristics. It is unusually resilient and soft under foot. It resists fire, cigarette burns, scratches. It is unaffected by greases, oil, alkalis, and mild acids. Laboratory and wear tests have shown that it has two to three times the abrasion resistance of standard asphalt tile.

The colors of this new J-M flooring are clearer, brighter and more stable than ever before obtained in a resilient flooring . . . and its flexibility is a decided advantage in preventing "lifting" due to working of the car floor. For further information, write Johns-Manville, Box 290, New York 16, New York.

Johns-Manville *91 YEARS OF SERVICE TO TRANSPORTATION*

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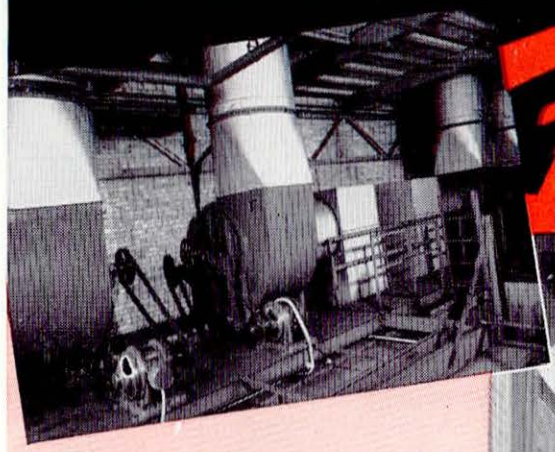
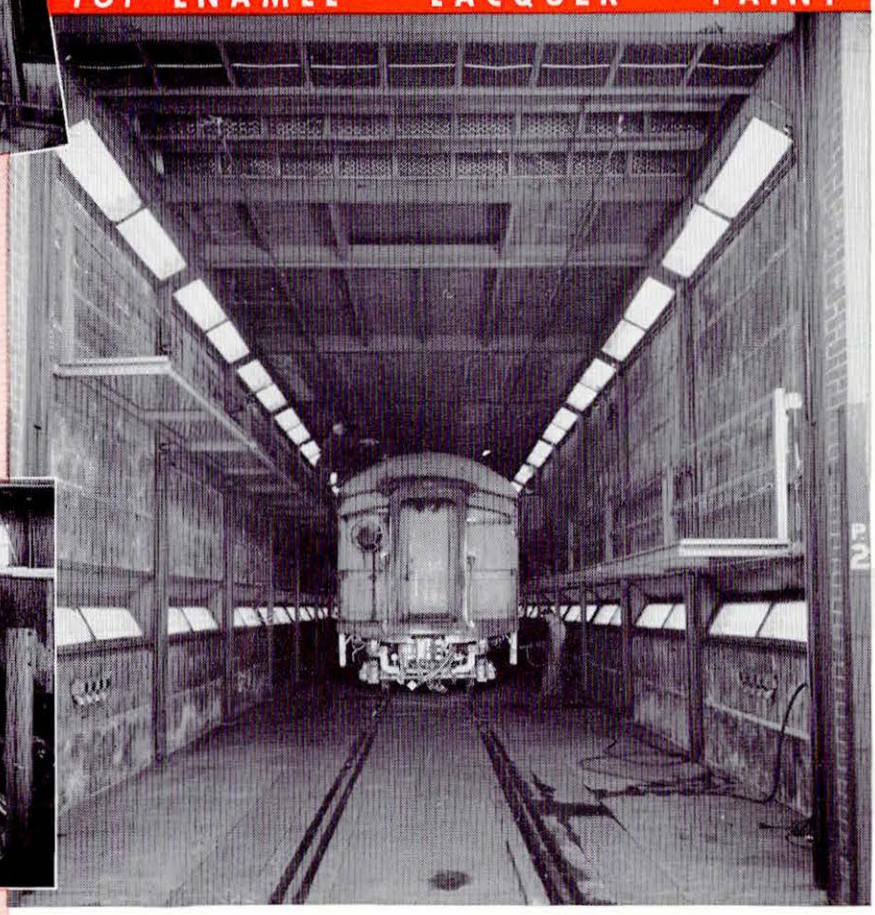
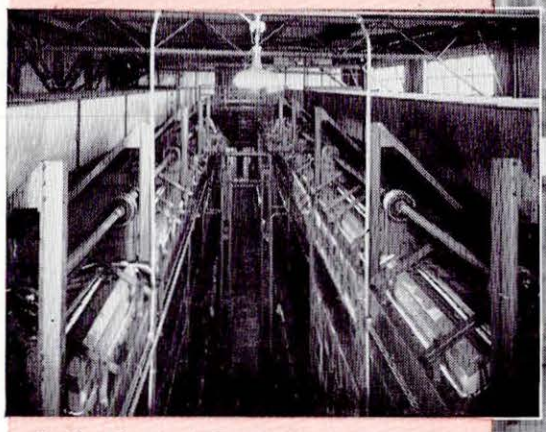
for ENAMEL • LACQUER • PAINT

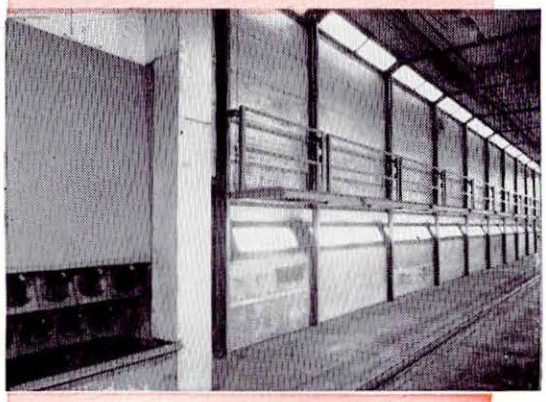




At Right: Interior of Mahon Combination Spray Booth-Dryer Designed to Handle Railroad Coaches and Locomotives. Note Electrically Operated Scaffold-Elevators on Either Side (these may be adjusted up or down by the workmen at will from any position on the scaffold). Note, also, the Filtered Air Diffusers in the Upper Foreground. Above: The Suction-Exhaust Fans Located Directly Above the Hydro-Filter Units in the Rear of the Combination Spray Booth-Dryer.



Top View Showing the Two Combination Spray Booth-Dryers with Heating Ducts, Filtered Air Supply Units, and Operating Mechanism for Scaffold-Elevators.



Mahon Hydro-Filter Units on Either Side at Rear End of Combination Spray Booth-Dryers. These Remove Overspray from the Air Before it Enters Exhaust Fans.

Modern Equipment Cuts Costs . . . Pays Dividends Over a Long Period of Time!

Modern painting facilities in railroad shops gets the job done today in less time at lower cost. Specially engineered equipment such as the combination Spray Booth-Dryer, illustrated above, with power operated Scaffold-Elevators, provides ideal working conditions and greatly reduces man hours per unit. In this particular installation two Spray Booth-Dryers are located on adjacent tracks, permitting painters to paint in one while the drying process is in operation in the other. These railroad finishing systems may be installed inside of the shops or built outside as a self-housed unit. Experience gained over a period of twenty-nine years of pioneering development and research, in this highly specialized field, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. Call in a Mahon engineer today . . . get complete information and an estimate on equipment of this type to meet your specific requirements.

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MAHON

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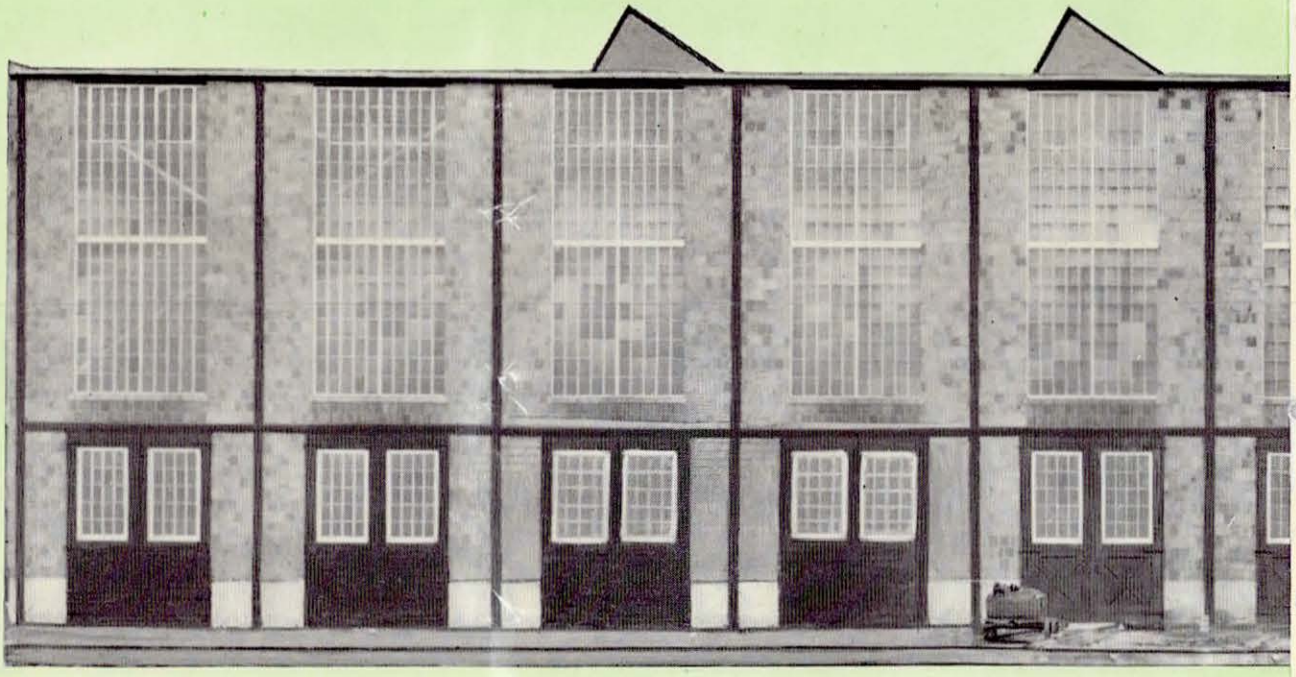


Alco GE

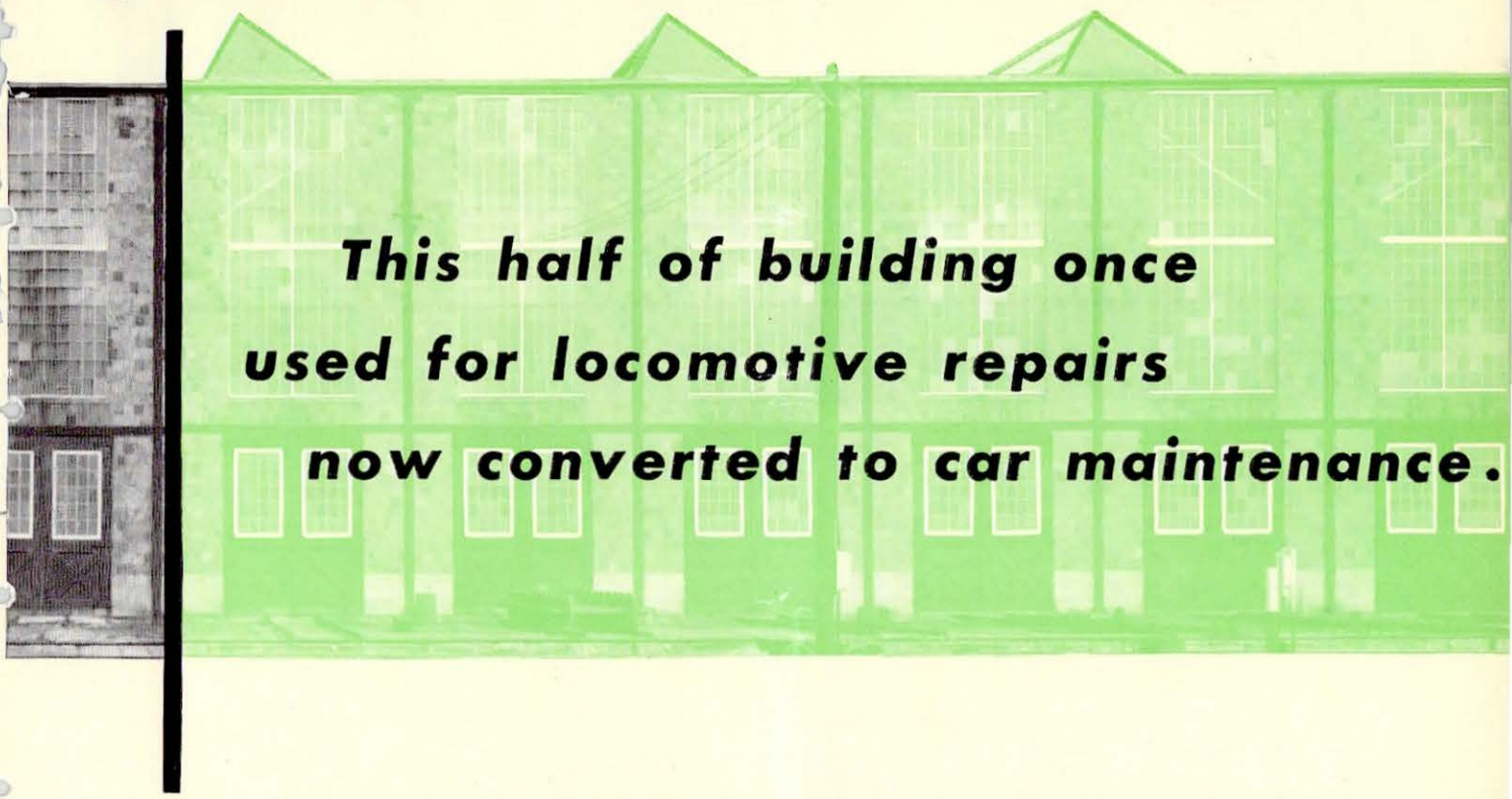
AMERICAN LOCOMOTIVE

Recently, Mr. S. T. W. Green, Vice President and General Manager of the Lehigh and New England Railroad, told us, "We no longer need to build a new car shop because our new Alco-G.E. diesel-electrics have permitted a tremendous reduction in space required for locomotive maintenance and repair. In fact, we dispensed entirely with our need for the engine house and require only one-half our former locomotive back shop. The other half of the back shop is now used exclusively for repairing and rebuilding railroad cars. Thus, in a very real sense, Alco-G.E., through these locomotives, gave us a car shop."

The L. & N. E. placed the order for their Alco-G.E. locomotives as the result of a motive-power study made in 1947. This study was based only on operating and maintenance savings of the Alco-G.E. units. The actual application of Alco-G.E. locomotives provided an unexpected dividend by saving a planned capital expenditure for a new car shop.

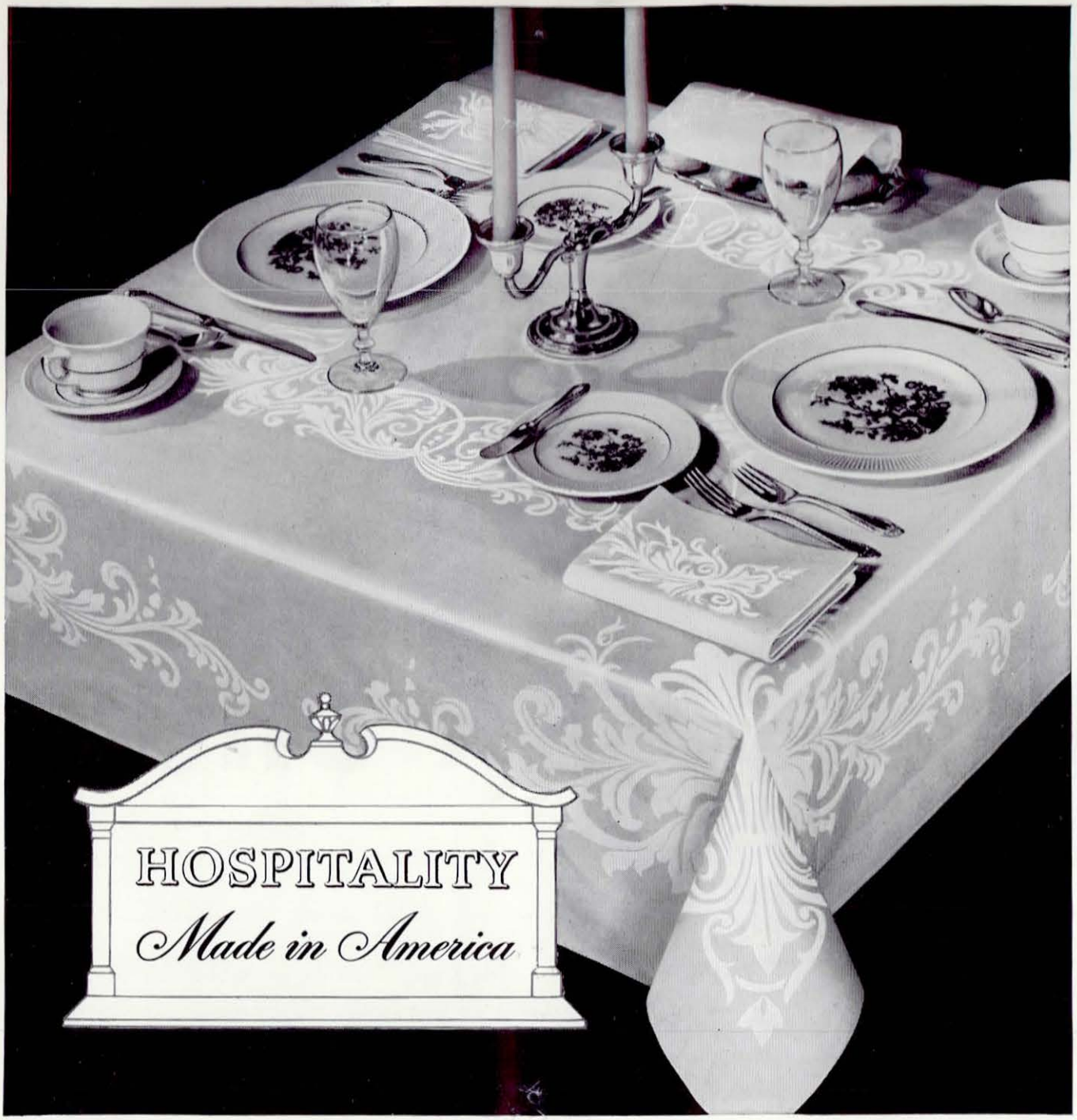
Diesel-electric operating and maintenance savings are a known quantity on most railroads today. Extra dividends, such as those realized on the L. & N. E. may be available to your railroad. Your Alco-G.E. representative is prepared to help you find them.

gave us a CAR SHOP



and GENERAL ELECTRIC

IN CANADA Alco GE IS MLW GE



Managers of successful dining services know that attractive table appointments are extremely important in creating an inviting atmosphere of hospitality. Today, in American-made napery, in china, silver and glassware, you'll find a widely diversified selection of designs and qualities from which to choose those most appropriate to the general decor of your dining room.

China:
Staffordshire "Indian Tree" Pattern by Shenango Pottery Company

Silver:
"London" Design by Reed & Barton

Glassware:
"Georgian" Pattern by Libbey Glass

Table Napery:
"Scroll" Pattern by SIMTEX Mills

Simtex
FORMERLY ROSEMARY

SIMTEX MILLS • *Division of Simmons Company* • 40 Worth Street, New York 13, N. Y.

It's easy to see how A.S.F. Ride-Control Trucks protect roadbed, car, and contents. Constant, *uniform* pressure, between friction shoes in the bolster and plates welded to the side frame, cushions the movement of soft, long-travel springs . . . smooths and controls all bolster motion for an easy, *all-speed* ride.

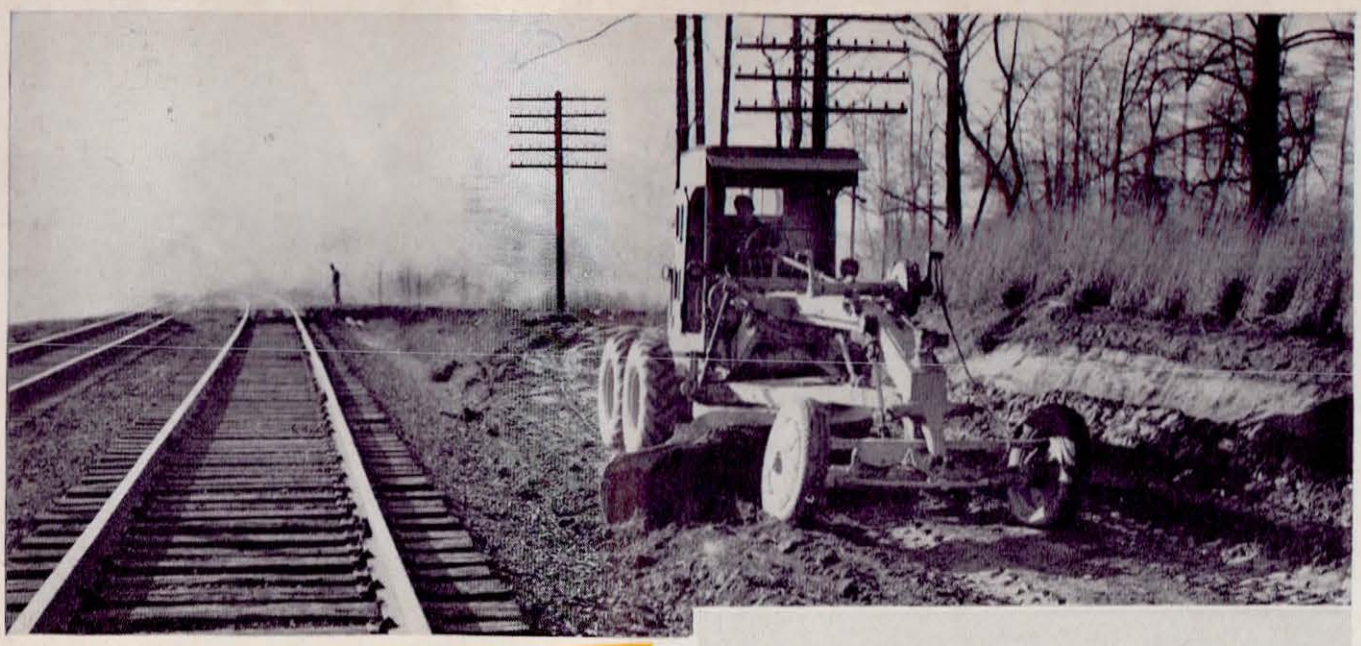
A NEW CONVENIENCE . . . Today, it's easier than ever to recognize this modern equipment. Trucks now being delivered carry their name on the side of the *flanged spring seat*—a very appropriate location because A.S.F. originated this *parts-saving* spring seat design. But it makes no difference where you find the name. Actions speak *much* louder than words for the smooth-rolling Ride-Control Truck.

A-S-F *Ride-Control* TRUCK

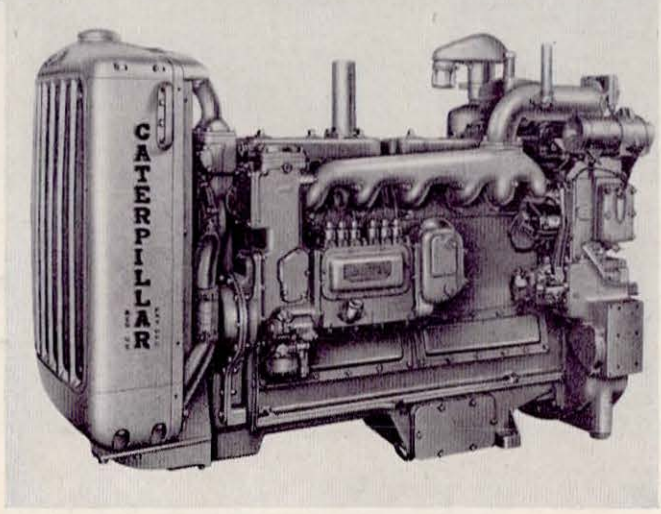
CONSTANT FRICTION CONTROL
LONG SPRING TRAVEL

AMERICAN STEEL FOUNDRIES

MINT MARK OF FINE CAST STEEL



MONEY SAVER OF MANY USES!



"CATERPILLAR" DIESEL ENGINE

Dependable is the word for this economical engine. Designed and manufactured from quality materials for long life, it eats up work, doesn't eat up fuel. It's one of many reasons for the superiority of the big yellow machines in every line of work.

THE MORE JOBS a machine can do fast and at low cost for you, the more valuable it is. That's why more and more railroads are using this husky, easy-to-handle "Caterpillar" Diesel No. 12 Motor Grader. A one-man track team, it's a great all-round performer, taking jobs calling for stamina and accuracy in stride. To mention a few: ditching and smoothing right of way; improving road crossings; bringing spur and switch grades to final smoothness before laying rail; shaping back slopes to reduce erosion. Here you see it busy on relocation work on the B. & O.

From front axle to radiator cap the No. 12 is all "Caterpillar." That assures you of a perfectly balanced machine with one manufacturer responsibility and one dealer service. There are more than 280 reliable, well-equipped "Caterpillar" dealers' places of business throughout the United States and Canada. Call the nearest today and get the full facts about these money-saving motor graders.

CATERPILLAR TRACTOR CO., PEORIA, ILL.

CATERPILLAR

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DIESEL ENGINES • TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT

l o n g e r SPRINGS

BARBER STABILIZED TRUCKS

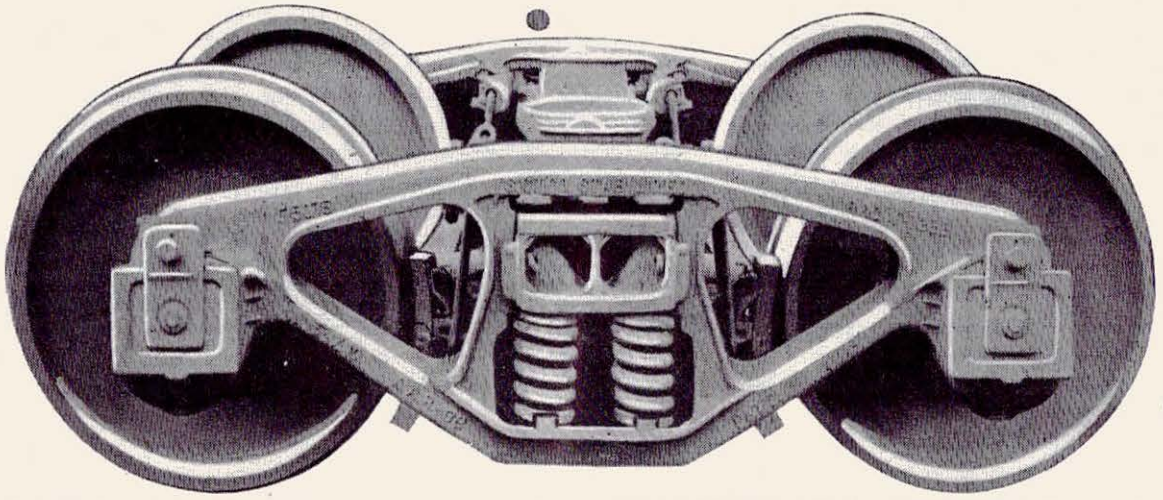
Over 210,000 sets of Barber Stabilized Trucks have been ordered.

1 Special Alloy-Iron friction casting having 35 square inches of friction-bearing surface.
2 Spring-steel wear plate securely bolted or welded to the column.
3 Friction-casting-supporting side-spring having a minimum 3/4" initial compression.

Back in 1939 it was apparent that the constant demand for higher train speeds would create a demand for l-o-n-g-e-r Bolster Springs to cushion and absorb the greater road shocks which would be encountered.

At that time, pioneering studies and tests on l-o-n-g-e-r springs were started by this Company, resulting in the development of Barber Trucks for springs having up to 3 13/16" travel or more, with the necessary stabilizing combination to control their greater movements.

Many thousand Car Sets of these l-o-n-g-e-r Spring Barber Stabilized Trucks are now in service, giving Freight Cars a fully controlled, smoother Vertical and Lateral ride.



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STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

On the new "Southern Belles" it's HYATTS

Hyatt equipped GM Diesel Locomotive built by Electro-Motive Division furnishes the motive power for this train. Truck of Hyatt equipped cars built at the American Car & Foundry Company St. Charles Shops, shown below.

Powered by the newly developed Model F-7 General Motors Diesel Locomotives, the Kansas City Southern's new, ultra modern "Southern Belles" offer added luxury and faster schedules to KCS passengers between Kansas City and New Orleans.

Hyatt Roller Bearing Journal Boxes on the locomotives and cars contribute to the smooth starting and easy riding of these crack trains.

Because progressive railroads find Hyatt Journal Boxes thoroughly dependable, easier to maintain, easily serviced by regular shop personnel and easier on operating budgets, more and more of them are equipping their name trains with Hyatts.

If you plan to purchase Roller Bearing Journal Boxes for new or change-over equipment, let us prove what Hyatt can do for you. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARING JOURNAL BOXES

Vol. 127, No. 6 August 6, 1949

RAILWAY AGE

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Published each Saturday by the Simmons-Boardman Publishing Corporation, Orange, Conn., with Editorial and Executive Offices at 30 Church Street, New York 7, N. Y., and 79 West Monroe Street, Chicago 3, Ill.

Washington 4, D. C.: 1081 National Press Building—Cleveland 13: Terminal Tower—Seattle 1: 1038 Henry Building—San Francisco 4: 300 Montgomery Street, Rooms 805-806—Los Angeles 14: 530 West 6th Street—Dallas 4: 2909 Maple Avenue.

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Subscriptions, including 52 regular weekly issues, and special daily editions published from time to time in New York or in places other than New York, payable in advance and postage free—United States, U. S. possessions and Canada: 1 year, $6.00; 2 years, $10.00; other countries not including daily editions in Western Hemisphere: 1 year, $10.00; 2 years, $16.00; other countries: 1 year, $15.00; 2 years, $25.00. Single copies, 50 cents each, except special issues.

H. E. McCandless, Circulation Manager, 30 Church Street, New York 7.

Railway Age is a member of Associated Business Papers (A. B. P.) and Audit Bureau of Circulation (A. B. C.) and is indexed by the Industrial Arts Index and by the Engineering Index Service.

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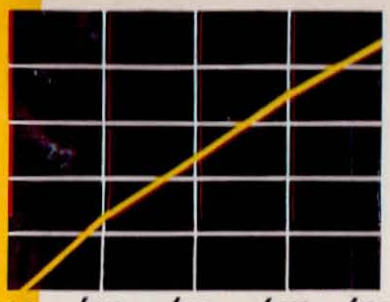

In the last four years alone, over 4400 "Union" T-20 and T-21* Switch Stands have been installed. This trend parallels the extensive improvement programs initiated to adapt track structures to higher train speeds.

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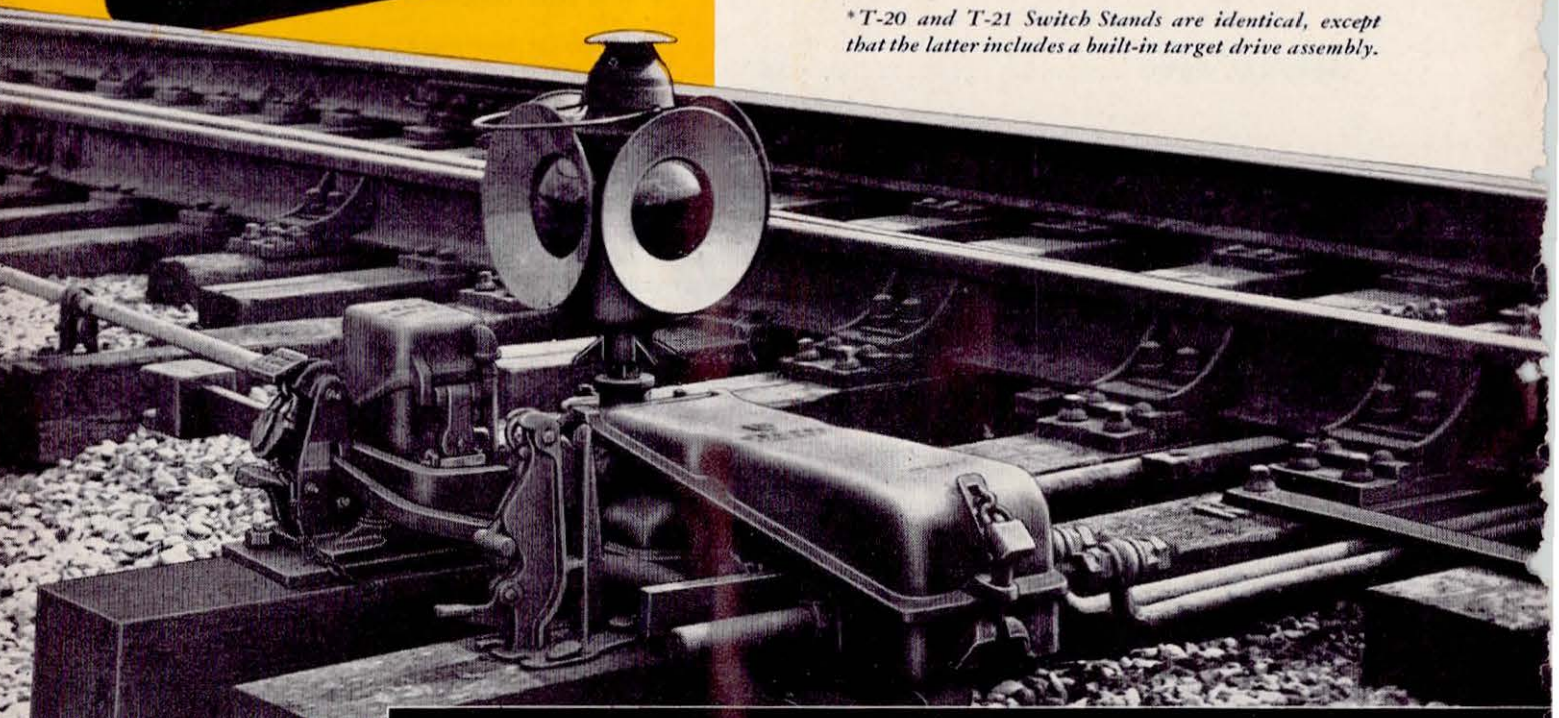
NOW IN SERVICE!

AND HERE'S WHY...

"UNION" Switch Stands are more than devices for throwing switches. Their design also incorporates in the one mechanism facilities for locking the points when normally positioned, and . . . by means of a point detector and built-in circuit controller . . . checking that (1) the lock rod is actually locked and (2) the points are properly positioned.

With these extra safety features, *"Union" Switch Stands provide protection equivalent to that of interlocked switches.* Why not ask any of our district offices for full details?

**T-20 and T-21 Switch Stands are identical, except that the latter includes a built-in target drive assembly.*



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NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

BRIGHT SPOTS: It's not giving away any secrets to say that the railroad passenger traffic picture is, to put it mildly, unsatisfactory. But it does have its bright spots. One—or rather two—of the brightest are the Central of Georgia's short-run streamliners "Man o' War" and "Nancy Hanks II," which are actually carrying more passengers this year than last. How the railroad has made these trains pay even in sparsely-settled territory by a complete "package" of low fares, luxury equipment and on-time performance is told on page 47.

SIX-YEAR PAYOFF: As every railroad man ought to know, centralized traffic control can be a fertile source of major financial savings, as well as of definite operating advantages. An illustrated article which starts on page 52 shows how the Gulf Coast lines is collecting in both ways from its 132 mi. of C.T.C. between Houston, Tex., and Vanderbilt. It is saving approximately 1½ min. per mile in time of through freight trains; and enough dollars—one hundred forty-nine thousand of them a year—to pay for the project in six years.

PACKAGING RESEARCH SAVES MONEY, TOO: Just as "packaged" transportation is making money for the Central of Georgia, packaging—on a scientifically planned basis—is saving money for the Electro-Motive Division of General Motors Corporation, and for its customers. Beginning on page 42, R. C. Lambrecht, E.-M.'s industrial packaging engineer, tells how his company has used such scientific packaging of its repair parts to make them easier to handle and to reduce loss and damage.

MORE NEWS FROM ENGLAND: Bill Schmidt, *Railway Age's* traveling transportation editor, is still arousing the envy of other members of the staff by his accounts of his current visit to Great Britain. Another letter from Bill appears on page 45.

COORDINATION ON THE U. P.: For clear proof that coordinated rail-truck service can be so worked out as to provide better transportation for the public, see the description, on pages 54 and 55, of the Union Pacific's coordinated highway vehicle service for "head-end" business. Covering 660 route miles of line—on some of which l.c.l. freight is also handled—the service has cut travel time of passenger trains and speeded up mail and express service to smaller towns by as much as 24 hours.

SIX MONTHS' NET: It probably won't be much of a surprise, but the net income of Class I railroads in the first half of 1949 was only about two-thirds of that in the corresponding period of 1948. For details, see the News pages.

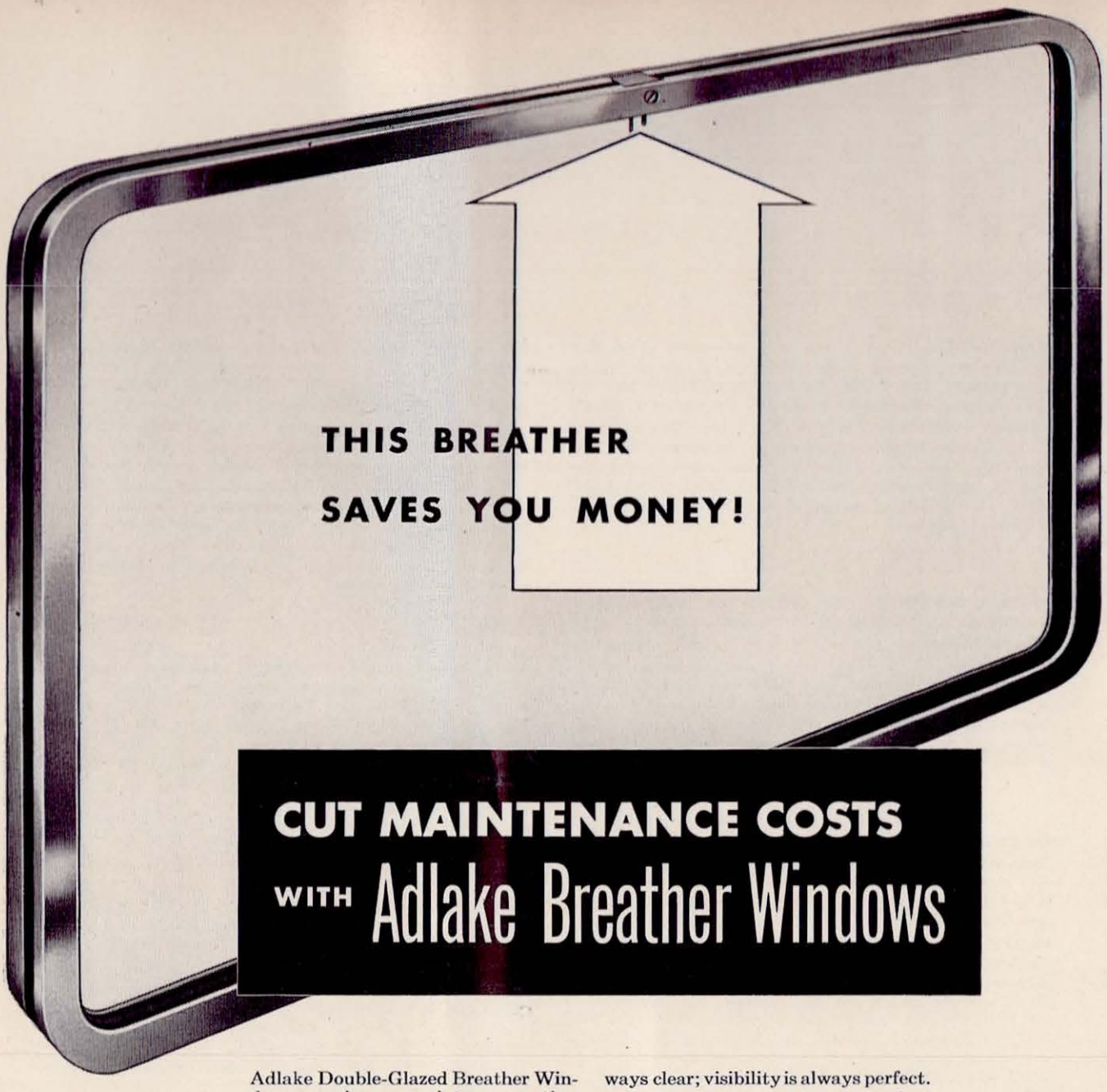
THE SIMPLE, BASIC ISSUE: The national transportation problem, stripped down to its essentials, is a simple one. It appears complicated only because those interests which profit from the presently-existing chaos have deliberately made it appear so by bringing in a lot of relatively unimportant side-issues. The main question, as brought out in this week's leading editorial, is whether or not the American people, and their political leaders, have enough realism to begin assessing costs of transportation facilities which compete with the railroads upon the users of those facilities, to at least some degree in the same manner that the railroads are obliged to levy comparable charges upon users of railroad service.

MORE ABOUT SMOKE ABATEMENT: On pages 40 and 41 is an abstract of a paper presented at the annual meeting of the Smoke Prevention Association of America by H. E. May, shop engineer, Illinois Central. In it, Mr. May discusses the abatement of smoke and cinders on locomotives and at enginehouses, with special reference to methods developed by his company to reduce smoke while firing up, and from stationary boilers.

THE RAILROADS' TURN: For nearly five weeks a Presidential "fact-finding" board, sitting at New York, has listened to representatives of the Brotherhood of Locomotive Firemen & Enginemen argue in favor of putting an extra—and unnecessary—"fireman" on "fireless" Diesel-electric locomotives. The railroads' turn came late last week, and they immediately presented an impressive array of witnesses, beginning with Ralph Budd, to refute the necessity for any such "featherbed" job. The convincing arguments of Mr. Budd and his fellow railroad executives are reported in the News section.

TIE RENEWALS DOWN AGAIN: Because of the almost universal practice of treating crossties with preservatives, the railroads in 1948, for the fourth year in succession, were able to reduce the total number of ties laid in track. A report on 1948 tie renewals, including detailed statistics for Class I roads in the United States and principal Canadian roads, and some general comparisons with earlier years, begins on page 48.

HUMP-YARD DIESELS: In an illustrated article beginning on page 38 David M. Barr, application engineer of the Baldwin Locomotive Works, analyzes the characteristics needed in a Diesel-electric locomotive for hump-yard service, with special reference to the Baldwin-Westinghouse six-motored 1,500-hp. road switching and 2,000-hp. transfer locomotives. Mr. Barr's article also includes some of the calculations necessary to determine the power required in such service.



CUT MAINTENANCE COSTS WITH Adlake Breather Windows

Adlake Double-Glazed Breather Windows require no maintenance other than routine washing. There are no "devices" to service, no drying compounds to change! The famous Adlake "breather" banishes dehydrants completely. Here's how:

The "breather" permits the air between the two glass panes to adjust quickly to changes in temperature, altitude, and humidity. The outside air must pass through a cotton filter before entering between the panes, and so is washed of dust and dirt. The enclosed pane surfaces remain always clear; visibility is always perfect.

And here's an important saving: When panes are accidentally broken in service, *only the broken glass* needs replacement—not the entire window! New panes can be *easily* and *quickly* installed—on your own property—and your Adlake Breather Window is like new again!

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THE SIMPLE, BASIC ISSUE IN TRANSPORTATION

Economic facilities fall into government ownership in a country such as this one—where people are not committed to socialization as a matter of doctrine—only when a political majority demands such facilities to a degree of development beyond that for which willing customers are prepared to pay. In the early days of railroad development the people, speaking politically, usually "demanded" railroad facilities in advance of a traffic potential sufficient to yield an immediate return on the necessary investment. This was a situation ready made for railroad building under a regime of government ownership—except for the fact that, as the Constitution was interpreted a century ago, the federal government was not empowered to engage in "internal improvements." Political assistance to railroad financing was, thus, largely limited to that which state and municipal governments could be induced to engage in—and their participation usually took the form of the purchase of corporate securities, just like those issued to private investors, so the danger of political domination was largely avoided; and the shifting of the costs of railroad service to the taxpayers did not become standard practice.

When the demand came for large-scale development of highways, waterways, and airways, the federal government had grown tremendously in power. It had shaken off the constitutional restriction against engaging in "internal improvements"; and, in the adoption of the income tax amendment, it had secured access to practically unlimited financial resources. The result has been that government ownership and government domination of the development of highways, waterways and ground facilities for air transport has met with no hindrance. Government assistance has not been advanced through the purchase of corporate securities in these facilities. Government aid, that is, has usually been an outright gift and has not become an item of cost to customers—as did investments by state and municipal governments in the early railroads.

The Basic Difficulty

The basic difficulty in the situation of the transportation industry today is the existence—side by side, and competing for the same business—of privately owned transport plant (railroads) which is endeavoring to collect all economic costs of the service from customers; and publicly owned transport plant (highways and waterways) which is supported in whole or in part by political contributions which do not enter into the charges which are exacted of customers who use this publicly owned plant.

Since the nation has no desire to part with its railroad service, and would prefer to be served by privately owned railroads rather than by government-operated lines, the unavoidable practical issue

has arisen of revising methods of payment by users of government-owned transportation facilities which compete with the railroads, in a manner resembling that by which users of the railroads must contribute to the cost of railroad plant. In most discussion of transportation questions, the issue of the contrasting methods used to finance the publicly and privately owned "roadways" over which goods and persons are moved is rarely encountered in its naked simplicity. Instead, such confusing side-issues are brought in as the "fairness" of paying for transportation by taxation or some criticism as to the technique of railroad rate-making, or some sophistry to defend the vested interest which truck or barge owners assume they have because, "in good faith," they have spent their money for these vehicles on the assumption that they would continue to get the use of waterways for nothing and of highways at much less than a compensatory charge. Such arguments have no bearing on the main issue; and serve only to complicate the discussion and make it impossible for a layman to understand.

The Practical Question

Such questions are, no doubt, interesting and of considerable importance—but they are mere piffle when compared to the practical question of *whether the American people and their political leaders have enough realism to begin assessing the costs of transportation facilities which compete with the railroads upon the users, to at least some degree in the same manner that the railroads are forced to levy comparable charges upon the patrons of railroad service.* If a practical and realistic answer were given to this question, most of the other controversies about the transportation industry could be resolved largely against the railroads' interests without doing them any irreparable damage. By the same token, practically all the side-issues about transportation policy could be resolved in the railroads' favor, without doing the industry any lasting or substantial benefit —unless provision is made that payment for the use of long-haul transportation facilities in government ownership be placed upon substantially the same basis as user payments for railroad service.

It is not a matter of practical importance to the railroads whether non-commercial users of the highways or operators of vehicles on the highways for *short hauls* are required to pay the full economic cost of the facilities provided for them or not. It is, on the other hand, an indispensable condition of railroad survival as a private industry, supported and financed from voluntary private sources, that government quit giving away to long-haul commercial users of the highways the value built into the highway system by general taxation and by the contributions of short-haul and non-commercial highway users.

Among the practical measures necessary to achieve this objective, the following are undoubtedly the most important: (1) Restriction of weights and sizes of highway vehicles within limits which make it practicable for owners of such vehicles to defray the added costs which large sizes and heavy weights entail; (2) revision of charges for highway use by heavy vehicles, as shown by recent studies in Illinois and elsewhere to be necessary to make such charges compensatory; (3) modification of the federal aid highway act to remove the prohibition of toll charges, at least in so far as it refers to commercial use of the highways; (4) extension of the toll principle for financing long-haul highways as far as practicable, giving local roads and city streets "first call" on all funds derived from registration fees and fuel taxes; (5) abandonment of the grandiose program for the development of a vast system of inter-regional superhighways unless toll financing is provided to defray the costs; (6) reducing or prohibiting the application of "reciprocity" to non-local commercial vehicles; and (7) ceasing to apply regulatory restrictions against the railroads in their rate-making, when they are confronted with the competition of private or contract highway carriers.

This is no argument for a theoretical "square deal" for the railroad industry. It is a practical statement of steps necessary to prevent the railroads from becoming, as highway and waterway transportation have already become, a charge upon the public purse. It should be made clear to the public that all persons who oppose such measures as those outlined above —whatever casuistry they employ to defend themselves—are, as a practical matter, advocating the wholesale socialization of the transportation business. The issue is not complex, except as professional complicators have made it so. It is, on the contrary, quite simple.

STUDY LIGHT REPAIR TRACKS

Light repair tracks serve essentially the same purpose for freight cars that service stations do for automobiles—namely, to make possible emergency and light repairs so that cars can continue on the road, with or without load, until such time as shopping for heavy repairs is required. Just as some service stations are poorly equipped, organized and manned, many light repair tracks are deficient in one or more of these particulars and, until this deficiency is corrected, it is hopeless to expect to get desired results from them either in the quality and cost of work, or the speed with which freight cars are repaired and returned to service.

The condition and output of repair tracks is a matter of concern for top management if for no other reason than the large expenditures necessary to provide these facilities. It is by no means uncommon for a major railroad to spend $7½ to $9 million a year for freight-train car repairs, a substantial proportion of which is for light repair work. These amounts constitute roughly one-quarter of total maintenance of equipment and about 4 per cent of total operating expense. Another reason for top management attention to light repair tracks is that the kind of work they do is directly related to the quality of railroad service—e.g., the length of time loaded cars are delayed in transit; and whether or not cars given light repairs will run for a reasonable period without further attention.

The major requisites for efficient car repair tracks include intelligent attention to location, layout, equipment, method of operation and, doubtless most important of all, the competency and morale of supervisors and carmen employed there. All repair-track forces need to be trained, developed and encouraged in every way practicable; and one of the best ways *not* to boost their morale is to make this department the first and major sufferer whenever a drop in carloadings necessitates reduction in forces.

Aside from necessary small shop buildings and motorized equipment for handling mounted car wheels and other heavy materials efficiently, the greatest mechanical asset of any light repair track consists of the numerous small tools and labor-saving devices, such as power jacks, A-frames, single-car testers, coupler and draft-gear lifts, which so greatly expedite the work. A thorough check to make sure that individual repair tracks have a full complement of this sort of equipment and that the men know how to use it is definitely in order.

Most light repair tracks are operated by spotting bad-order cars more or less over the entire yard and moving repairmen and materials to the cars. Experience on a number of roads indicates the possibility of economy by moving cars through certain spots where specialized men and materials are available to make repairs at reduced unit cost. This applies particularly to such work as changing wheels. The installation of permanent jacking pads, power jacks, jib cranes and electric hoists makes it possible to cut wheel-change time 50 per cent or more.

Experienced repair track foremen generally know what is needed to improve operation at their respective points and, in most cases, the relatively small expenditures they recommend will be returned perhaps more than once in the first year.

"A CHANCE FOR FAIR COMPETITION"

Every business, whether large or small, must be constantly alert to government regulation and competition, but I believe the critical situation which the railroads face today is the most outstanding example. Being the first of the large industries to be regulated, we have operated under Interstate Commerce Commission control for more than half a century. Not only are our revenues controlled by rate regulation, but our accounting, financing, borrowing, and inter-railroad relations are constantly under the surveillance of some government bureau or commission. While our costs for materials and supplies began rising in 1940 and continued upward at an accelerated pace until recently, it was not until July of 1946 that freight rates were increased. Railroad operating expenses, including taxes, have risen 93 per cent in the 10 years since 1939. On the other hand, freight rates charged by the railroads have increased progressively beginning with a 6.5 per cent rise in mid-1946 until now when the total increase is still only 51.7 per cent over 1939. Passenger fares have gone up but 25.4 per cent during the same period. While appeals were pending for rate increases we have watched expenses mount higher so that when the increase was granted its benefit had already been lost.

With the slacking off of traffic volume since the war the railroads have been facing stiff competition from other forms of transportation. The railroads and the pipelines are the only public transportation not subsidized by government aid. While we must spend huge sums for maintenance and real estate taxes on our roadbeds, the airlines, truck lines, and barge lines use facilities costing millions of dollars and paid for by the public treasury. . . .

Recently a New York Times editorial pointed out that in spite of the fact that our transportation structure represents one-fifth of all the invested capital in the United States, for which our people pay $30 billion annually for services, so far there has been no serious effort to formulate an over-all transportation policy to coordinate activities under centralized direction while preserving the driving force of private enterprise and competition.

Surely if such a policy were adopted and followed in operation, the plight of railroad profits would be greatly relieved. The railroads are not asking for federal subsidies. All we ask is a chance for fair competition with other transportation agencies with a minimum of federal government interference. The increasing diversion of business from the railroads to other carriers could soon be reversed if the railroads had the same opportunities to adjust rates and the freedom from control now enjoyed by our competitors. . . .

We have received many warnings from economists and writers that the railroad industry is threatened with public ownership or nationalization. If this should happen it will be due to inaction on the part of government which could prevent such a catastrophe by permitting the railroads to earn reasonable profits. When government ownership engulfed railroads in most of the other countries of the world, it took other forms of public transportation as well, and then by gradual process, the mines, public utilities and all other basic industries. It could happen here—but it need not happen.

—From an address to the Downtown Kiwanis Club, St. Louis, Mo., by Arthur K. Atkinson, president, Wabash.

Six-Motored Diesels for Hump Yard Service

An analysis of the characteristics of a Diesel-electric locomotive for hump service and the calculations necessary for determining power required

By DAVID M. BARR
Application Engineer,
Baldwin Locomotive Works

What is the best type of locomotive to use in humping service? To answer this, the basic requirements of such a locomotive should be considered. First, it is necessary to have enough tractive force and horsepower to move the maximum train across the hump at humping speeds which vary from two to four m.p.h. Secondly, it is necessary to have enough tractive force and horsepower to start, accelerate and move the train from the receiving yard to the hump with minimum delay at speeds ranging from five to seven m.p.h. Also, consideration should be given to the starting and acceleration of a train when resuming humping operations after an interruption.

Power Requirement Calculations

A locomotive with maximum weight on drivers and high tractive force at sustained slow speeds is most desirable, bearing in mind that the initial cost would be lower on a product already engineered and in current production. Two locomotives meeting these requirements are the Baldwin-Westinghouse 1,500-hp. six-motor road switcher and the 2,000-hp. six-motor transfer locomotive.

To illustrate, consider an actual humping operation handling 3,000 gross tons from a more or less level yard, up a 0.4 per cent grade for 250 ft. and followed by a maximum grade of 0.9 per cent for 800 ft., with the track curvature averaging one degree. (See Fig. 1.) The peak tractive force required on this hump is shown in the table.

It is desirable in such service to employ a locomotive having a working adhesion of not more than 20 per cent for good operation. Such a locomotive would have to have approximately 326,000 lb. on drivers in order to exert the required tractive force of 64,200 lb.

To hump this train at approximately 3 m.p.h., the horsepower required at the rail is:

$$\frac{64{,}200 \times 3}{375} = 515 \text{ hp.}$$

To move the train out of the receiving yard to the hump, the power at the rail necessary to maintain an adhesive value of 25 per cent up to an approach speed of 5 m.p.h. would then be:

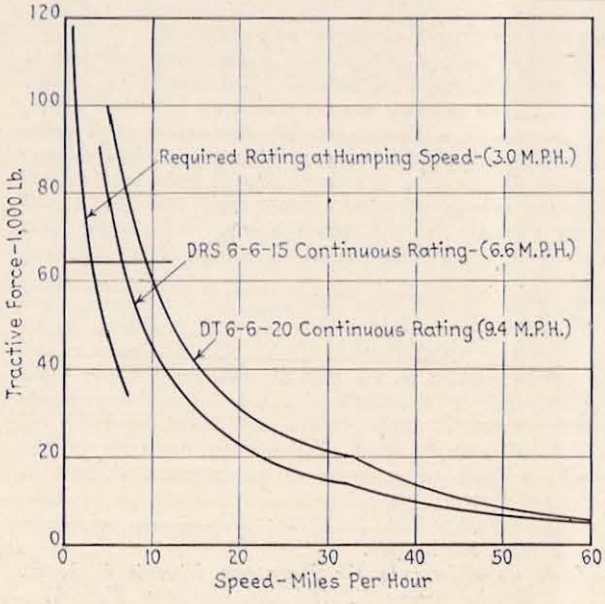


Fig. 2 (left)—Speed-tractive force curves. The curve DRS 6-6-15 is for the 1,500-hp. switcher and curve DT 6-6-20 is for the 2,000-hp. locomotive

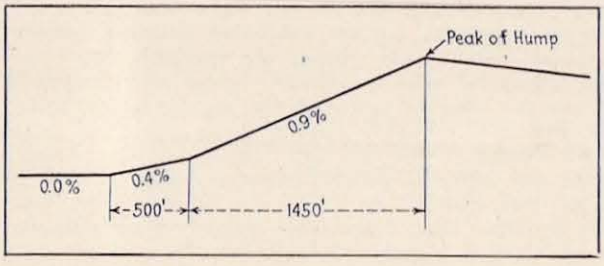
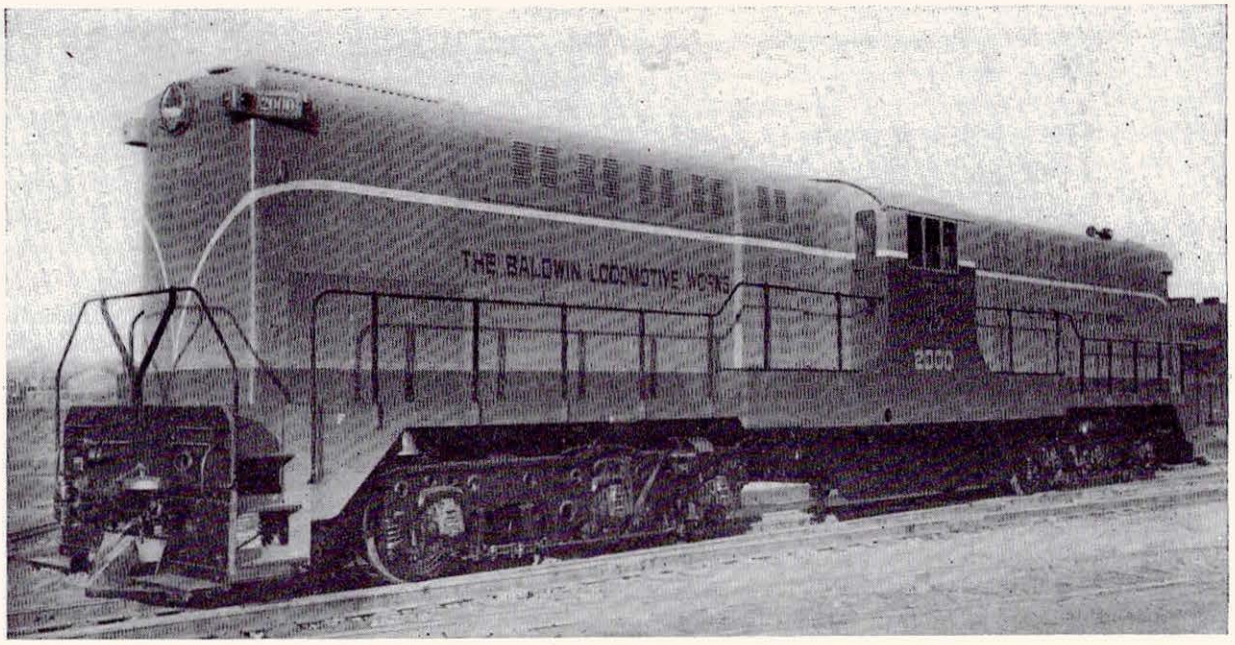


Fig. 1 (above)—Profile of a typical hump



Baldwin-Westinghouse 2,000-hp. road switcher with six traction motors

$$\frac{325{,}000 \times .25 \times 5}{375} = 1{,}085 \text{ hp.}$$

The locomotives meeting these requirements are the six-motor 1,500-hp. road switcher and the six-motor 2,000-hp. transfer.

In the case of a 2,000-hp. six-motor transfer locomotive, the maximum continuous rated tractive force is 64,200 lb. at 9.4 m.p.h. This tractive-force rating is the same as that of the road switcher, but the continuous rated speed is 2.8 m.p.h. faster than the road switcher. The advantage, then, that the transfer locomotive has over the road switcher is the higher possible operating speed to and from the receiving yards, although both locomotives have continuous rated speeds in excess of normal operating humping speeds.

Locomotive Operation

To operate either class locomotive at the maximum continuous rated tractive force and at the desired humping speed, it is necessary to maintain a constant rated engine r.p.m. of 625 in order to operate the mechanically driven blowers at their full capacities and thus supply the required amount of ventilating air to the traction motors. This is accomplished by the installation of a load-regulator actuating device which permits the locomotive speed to be varied by regulating the exciter field through a variable resistor (the carbonstat) while the Diesel-engine speed is held constant. This is done through direct manipulation of the existing throttle lever by merely placing the master controller lever in the humping notch position. The net result of such a manipulation would be a movement of the tractive force curve to the left of the maximum tractive force curve. This means that the tractive force remains constant while the speed is correspondingly reduced, as is illustrated on the accompanying curve (Fig. 2).

General Characteristics of Baldwin-Westinghouse 2,000-Hp. Road Switcher

Gage, ft.-in.	4—8½
Diesel engine:	
Two, six-cylinder in line	Supercharged
Horsepower for traction	2,000
Wheels:	
Driving	Six pairs
Idling	None
Diameter, in.	42
Wheel base; ft.-in.:	
Each driving truck	13—0
Total locomotive	54—9
Total weight (approx.), lb.:	
In working order	354,000
On drivers	354,000
Light	332,500
Starting tractive force, 30 per cent weight on drivers, lb.	106,200
Gear ratio	15:36
Continuous rating, tractive force lb., at 9.4 m.p.h.	64,200
Maximum safe speed, m.p.h.	60
Maximum overall dimensions, ft.-in.:	
Width	10—2
Height	15—4¼
Length, inside knuckles	74—0
Overhang front	16—6
Overhang rear	16—6
Minimum radius curvature, locomotive with train, ft.	191
Lubricating oil, gal.	340
Fuel oil, gal.	1,500
Engine cooling water, gal.	500
Sand, cu. ft.	45
Air reservoir capacity, cu. in.	60,600

When a train is to be moved from the receiving yard to the hump, the operator simply places the master controller in the forward position and pulls out on the throttle which, of course, is the normal procedure followed when starting a train. When he wishes to proceed at humping speed, over the hump, the throttle is returned to the off position, the master controller is changed from the forward to the hump position, and the throttle is again manipulated in the usual manner to attain the desired humping speed.

Abatement of Smoke and

The problem of reducing air pollution becomes more important daily since the general public, particularly in urban areas, is aware that something can be done to abate such conditions to a large extent.

While a locomotive is being serviced at its terminal the cleaning of flues, grates and arches, the inspection of smoke boxes, and the testing of steam pipes and units are of most importance from the standpoint of providing proper draft and combustion. The preparation of fires must be started by placing coal in fireboxes properly.

From experience it has been found that banking the coal along the sides and back of the firebox 14 in. to 18 in. thick, leaving the center approximately 4 in. thick, will result in a hot smokeless fire that will not require the addition of more coal while the boiler is raising steam. The fire, when lighted, should be started through the center of the firebox, preferably by an oil torch with treated fuel oil containing a non-smoking solution such as Nalco SR-155. The fire should be spread slowly into the banks along the sides and back of the firebox. A smoke inhibitor such as the one mentioned will prevent an undue amount of smoke when it would be most likely to occur—when the fire is first ignited.

Regardless of what kind of fuel is burned, smoke will result in the closely confined quarters of a firebox unless some means of inducing air in an appreciable amount is provided for. On the Illinois Central this has been done by supplying compressed air to the firebox with a device known as an "air fork." This apparatus has a double head, so shaped as to fan air into all corners of the box over the fuel bed. It is used in conjunction with the oil torch when the fire is ignited and until the fire has reached the coking stage when smoke is at a minimum. The use of a suitable blower and properly sized nozzle tip to complete the perfect draft, in close harmony with the procedure just outlined, will permit the firing of locomotives with a minimum of smoke and without any appreciable amount of fly ash.

The use of over-fire air devices operated with steam jets is universally accepted by railroads as the most efficient means of keeping smoke down to a minimum after the fire has been ignited and steam raised. This equipment is as various in design and application as "Heinz's 57 Varieties" with many of them satisfactory and meriting acceptance in the field in which they will do the most good.

At this stage, however, we can more or less get away from the mechanical equipment as used or to be used and concentrate on problems of operation, or the man who is using this equipment. How well he uses it depends upon how well he is instructed and how much interest he can be led to develop in abating smoke. The best smoke abatement device is a fireman who is honestly trying to abate smoke. Besides "selling" him on the idea that we can provide smoke prevention devices that will help him do a better job, the idea must be inculcated that his contribution to the cause of less smoke is important and is directly related to his ability. Some are aware of this connection and strive toward perfection in their duties while others are reluctant and will not go along with any method of firing without being continually policed.

From a paper delivered at the annual meeting of the Smoke Prevention Association of America in Birmingham, Ala., May 23-27.

Aids to Combustion

On most of our locomotives equipped with over-fire air devices, two 3½-in. tubes are placed on each side of the firebox. Steam is suplied through a ½-in. pipe with a valve conveniently located on the fireman's side in the cab. A ½-in. pipe cap is drilled with five 1/16-in. holes on 30-deg. angles through which the steam passes into the 3½-in. tubes. This creates a good suction of air and acts as a silencer.

A cast-iron elbow forced into the 3½-in. tubes from the inside of the firebox directs the steam and air on one side toward the firedoor and on the other side of the firebox toward the flue sheet, creating a whirling action over the fire which causes the hot gases to be mixed thoroughly with air and practically all combustible matter burned before passing over the arch to the flues.

At one point on the I. C. considerable research was carried out in an effort to arrive at some means of preventing the spreading of fly ash and soot from locomotives stacks while cleaning or knocking fires. A so-called smoke suppressor or scrubber was developed that fits over the top of the stack when the locomotive is placed on the cinder pit. This device is built of 3/16-in. steel, approximately 4 ft. high, and is bell shaped at the bottom. An inner flare enables it to fit snugly on top of the stack. Near the top of the device a ⅜-in. water connection leads to a Binks spray nozzle in the center of the barrel. High-pressure water discharged from this nozzle forms a water curtain which traps the cinders, soot and fly-ash particles as they rise upward and washes them into the lower bell and hence to the ground. This has proved very satisfactory.

At the point where this device was developed and is now in use we are handling from 12 to 14 locomotives per day and all radial tracks are equipped with smoke scrubbers to be used when blowing flues, holding or building fires. Analysis of the discharge gives proof of its effectiveness by virtue of the large amount of carbon and fly ash washed from the smoke and gases and carried away in the water to the ground.

The principles involved in combating smoke on loco-

Cinders on Locomotives and at Enginehouses

Some methods developed by the Illinois Central to reduce smoke while firing-up locomotives and stationary boilers

By H. E. MAY
Shop Engineer,
Illinois Central

motives are also applicable to stationary boiler installations but to a lesser extent, due mainly to the smaller number of these boilers in service, ease of maintenance, and less fluctuation of operating conditions. Most railroads have installations of relatively small units, 150 to 300 hp. For these smaller units the steam-air over-fire jet is particularly well adapted as an aid in abating smoke. It can be made by local forces usually from material on hand, is cheap compared with the all-air jets that require a motor- or turbine-driven fan and can contain the basic principles of design that have been worked out by others.

The secret of success is to get the jets so sized and so located that they will do the most good with the least amount of steam. By the "most good" I mean primarily to secure the greatest turbulence in the furnace at the hottest zone. This applies to hand-fired as well as stoker-fired boilers. It is well to remember in laying out a job that some convenient way should be provided for the operating personnel to keep the steam jets clean and to renew them when necessary.

Another point to consider is the steam operating pressure on the jets. If the pressure is too high at the header or supply, a reducing valve should be installed, perhaps a locomotive steam-heat reducing valve. Also the steam should be as free from moisture as possible. We recently found it necessary to install dry pipes on some small return tubular boilers to secure a better quality steam in spite of the drain we had on the line. Wet steam tends to clinker the fire and defeat the purpose of obtaining good combustion.

Elimination of Jet Noise

The noise of jets in both locomotive and stationary boilers can be a nuisance and its elimination or reduction is desirable; otherwise the fireman is prone to use the jets only when compelled to do so. In stationary plants noise can be reduced by using long air intakes and locating the openings away from the furnace front, but this cuts down the velocity of the air and makes the steam jet work harder. It is better to apply silencers which can be made in the local shop, using rock wool or some other sound absorbent material.

As mentioned, in applying these jets, a dry source of steam must be secured, drains or traps provided in the line, and the lines insulated. When jets are applied through the boiler fronts of a hand-fired installation, care must be taken to see that the jets do not extend out from the fronts too far or they become a safety hazard to the fireman. Jets applied in the bridge wall must be pitched upward toward the front sufficiently to avoid blowing cinders out the door.

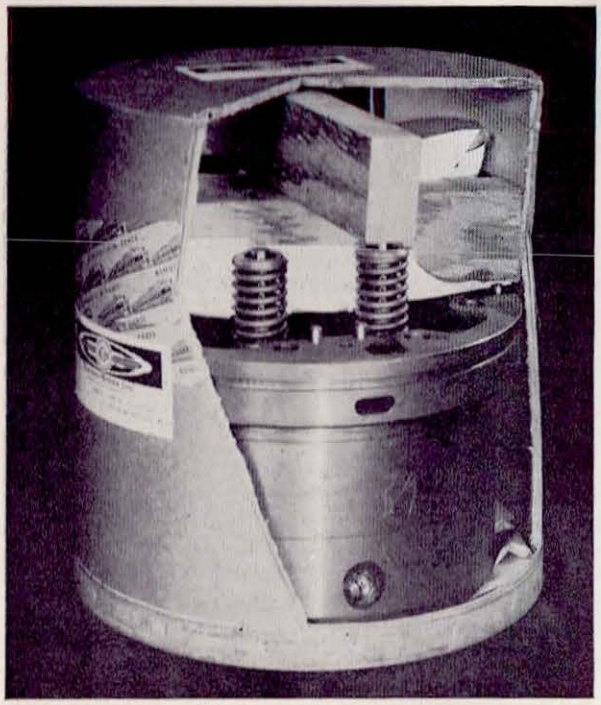
With two or three boilers in a single setting the problem of installation becomes a little more involved if bridge wall jets are used. On three boilers in a single setting we use a continuous tunnel through all three bridge walls in order to get air to the center boiler.

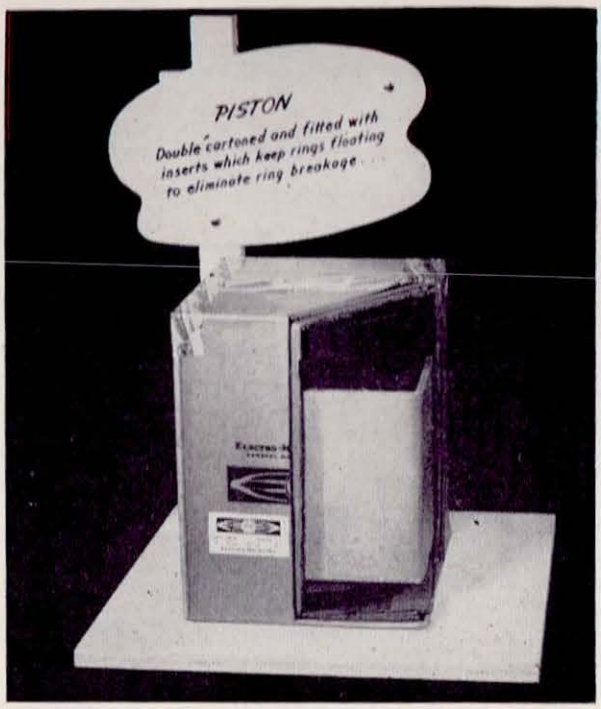
Jet Maintenance

The maintenance of over-fire air jets is like the maintenance of any other equipment. They must be regularly checked by the plant engineer or some assigned person, and whatever defects are found must be immediately remedied. The tube outlets into the furnace are apt to slag over, especially if the steam is shut off for any appreciable time. If this happens the efficiency of the jets is drastically reduced. Some installations have a small hole drilled through the steam valve seat so that there is always a small protecting flow of air through the tubes.

Smoke recording, indicating and warning equipment is now on the market. For either stoker- or hand-fired boilers, electric-eye equipment can be obtained to control uptake dampers or other factors influencing combustion. A plant having such equipment not only has an ever-alert mechanical smoke inspector but also obtains a continuous picture on the chart of what has happened and when. In installing this equipment it is better to place the electric eye as close to the furnace as possible to avoid the time lag when the eye is placed further from the boiler in the stack.

Inasmuch as stationary boiler installations on railroads are relatively small in capacity, eliminating fly ash from stacks does not involve as a rule the use of cinder traps on fly-ash arrestors. At the points on the I. C. where equipment of this type is used, provisions were made to return cinders and fly ash to the firebox, where the combustible matter is burned. In general, however, ample combustion space is provided for the load to be carried and the regulation of the fuel and air supply to a careful adjustment will result in very little trouble being encountered from excessive fly ash and cinders.





Left—Not long ago this cylinder head would have been packed in a heavy wooden box. This new carton lowers shipping cost and at the same time furnishes suitable protection. It is airtight, and by the addition of two wooden blocks chafing has been prevented. The very white area is a sheet of V.P.I. paper, which prevents rust; a chemical evaporating from the paper protects metal parts against the action of oxygen in the air. Right—Tight-fitting boxing of pistons used to result in ring breakage unless the package was handled with great care. Now the piston is cushioned on all sides and an inner liner grips it firmly yet still allows clearance for the rings to "float" freely

HOW PACKAGING RESEARCH PAYS

Consumer and manufacturer benefited as loss and damage are reduced and handling made easier—New rust preventative cuts parts preparation

By R. C. LAMBRECHT,
Industrial Packaging Engineer,
Electro-Motive Division,
General Motors Corporation

The objectives of all packaging are twofold.

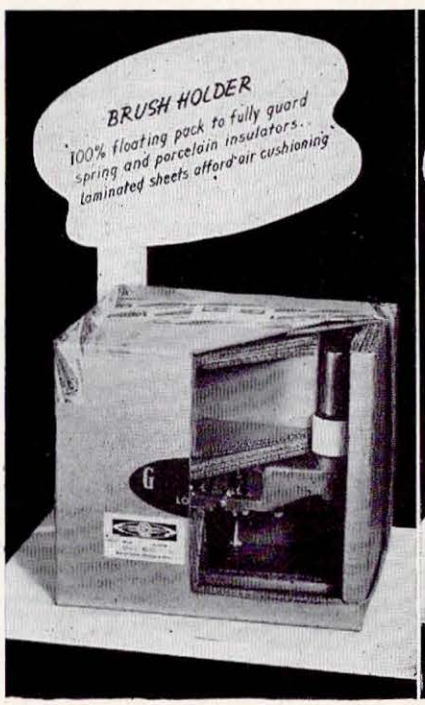
First, and foremost, it should assure the packaged article's reaching the ultimate consumer in a damage-free condition—providing the transportation agency performs its job with a reasonable degree of efficiency—and as nearly ready for use as possible. To Electro-Motive as a manufacturer and supplier of spare parts for the locomotives it builds, this is extremely important, for a damaged part arriving at the user's place of business may mean locomotive "down time," costing the owner money and causing him dissatisfaction. (As is obvious from that statement, packaging has its public relations angle too.)

Second, packaging should be as inexpensive as possible to the manufacturer and consumer, and the packaged article should permit easy handling. Furthermore, the container should be the lightest one in weight which can do the protective job, in order to cut shipping charges, thereby benefiting both manufacturer and consumer.

Thus, continued research is needed to insure that our containers are the best we can have, for new developments soon outmode today's accepted practices. With this in mind, our packaging research section is equipped with all sorts of testing devices, such as Conbur incline testers, direct drop tests and tumbling tests, and we have a staff of approximately 20 men and women who try constantly to improve our containers and cut the cost of our packaging. To date we have

Left—This relay, with plexiglas case, gets a "featherbed" ride in die-cut sections of corrugated board which provide bracing and air cushioning all around the assembly. The outer case is tough fiberboard, well stapled and taped to keep out dirt and give full protection. Right—Armature rewind kits are packed in a patented, telescopic container. The total weight is about 450 lb. The package with pallet base is A.A.R. approved. A nine-month test, involving shipment of 600 kits, was made before this package was adopted.

Right—This container, little larger than a 5-gal. ice cream container, holds a cylinder liner weighing almost 150 lb. Below left—The white porcelain insulator and projecting arms of this brush holder could be damaged easily by rough handling, so a floating pack was made of laminated sheets die-cut to fit. Below right—Gaskets must arrive perfectly flat to be usable. These head gaskets are packed 12 to a carton and cushioned all around


BRUSH HOLDER
100% floating pack to fully guard spring and porcelain insulators... laminated sheets afford air cushioning

Mr. Lambrecht has been in the packaging field for about 30 years, the first 20 of which, prior to World War II, were spent in packaging candy for shipment. During World War II, he went with Electro-Motive to help solve the packaging problems created by the needs for Diesel engine parts by overseas units of the armed forces.

After the war he went on to package Electro-Motive's Diesel parts for railroad motive power. Mr. Lambrecht is a member of the Illinois Chapter of the Industrial Packaging Engineers, a nation-wide organization.—*Editor.*

had to devise more than 400 different-sized boxes to prepack parts as soon as they are inspected and stored in our parts depots.

Packaging is a function almost as old as man himself. The origin of lighter, less expensive packaging can be traced back to the early Egyptians and Chinese. However, it was not until 1903 that corrugated cartons became acceptable in freight classifications. Perhaps the greatest advances in the use of these lighter packages came with World War II, when shipping space was at a premium and shipping weights had to be kept to a minimum. In finding solutions to many of the difficulties presented by government packaging specifications during the war period, many of us were aided in our search for better and less expensive packaging for domestic use.

Reduce Weight of Package

The trend of all shipping package weights is downward. In keeping with this trend, we have been able to reduce the weight of many of our shipping containers while giving the same protection as before. For example, many users of cylinder liners may remember the old wooden container in which they were shipped. That container and the liner, together, weighed 165 lb. At present, with the paperboard container, the weight is only 150 lb. On a shipment of, say, 100 liners, traveling l.c.l. from La Grange, Ill., to Los Angeles, Cal., 1,500 lb. are saved. At today's rates, freight charges on the shipment under the old conditions would have been $965.40. Using the present package, the charges are only $905.22. A saving of $60.18 is the result.

Nearly all packaging changes result in weight reductions. When we adopted V.P.I. (Vapor Phase Inhibitor) paper as a protective against rust it was necessary to add an inner liner of paperboard to the container housing a ring gear. This was done so that there would be no direct current of air blowing over the V.P.I. and tending, thereby, to shorten the period of efficiency of this rust preventative. However, this increased the weight only a few ounces. This is neglible with a 300-lb. completed package.

Laboratory work on loss and damage prevention is a necessity, and while we use drop tests, etc., in working out container design we feel that no answer is final until field service tests are made and the results tabulated. After we have run our packages through various laboratory tests and think we have the answer we ship the packaged articles all over the country by l.c.l. service, by express and by air. Finally they get back to us, and only then can we feel reasonably sure that we've scored a hit. (All packages are, of course, approved by the Freight Loading and Cointainer Section, Association of American Railroads.) For example, not long ago we ran tests on containers for cylinder heads and liners which included shipments from La Grange to Los Angeles and return, approximately 5,000 miles. Then the packages took another jaunt, this time to St. Louis, Mo., and back to La Grange. Since the results were favorable we were fairly sure by that time that we had satisfactory containers for those items.

Year's Test Necessary

Prevention of damage to many Diesel parts is not always a simple matter of a good outer container and plenty of cushioning inside. Plenty of Diesel parts are subject to rusting after only brief exposure to moisture, so we have been faced with the problem of protecting against both fragility and corrosion. For a long time many of these parts which were highly susceptible to corrosion were protected by "tectyl," a sticky substance which was applied to the article by dipping it in tanks of the fluid. The tectyl generally performed its job, but application to the part is an expensive and time-consuming process, and removal of the tectyl by the part user was the same, requiring 50-65 min. for removal from a cylinder liner, for example. So, when V.P.I. paper came along we tried it. We took some valves and had 15 women apply fingerprints to the valves. (Women were chosen because there is more acid in their skin-surface moisture than there is in men's.) The valves were boxed and V.P.I. paper inserted in the box. Storage at La Grange for one month followed. Then the packages were shipped to the General Motors testing laboratory at Coral Gables, Fla., for a full 12 months of exposure to salt air. When the valves were returned to La Grange there was no indication of rust, tarnish, or corrosion. We knew we had something good. Today we are expanding the use of V.P.I. and we are hopeful that eventually we will be able to eliminate entirely the use of tectyl.

Several factors which are overlooked quite frequently in planning packaging for articles are: (1) How the package will best fill the needs of producer and consumer as to storageability, and (2) whether or not the package makes for ease in ordering and identification, and readiness for application when received. I have mentioned that eliminating the use of tectyl as a rust preventative had made many parts ready for application within a few seconds of receipt, if desired. But our generator rewind kit is a good example of engineering for storage purposes, and illustrates also my point about ease of ordering. Contained in the kit are all

parts necessary for a complete generator rewind job. The whole is ordered under one part number although the kit contains 2,861 separate pieces. In this kit is a packing list of all items. Each item is separately packaged and identified and parts are packed in the order needed, with the first-used parts on top. Thus, when placed in stock by the consumer, only one trip is needed to move the kit to the job. In addition to the protection afforded by the wrappings and containers for the individual parts, the large box furnishes its share.

While I have told something of the results of our efforts to give our products better and lighter weight packaging, I am sure that the future holds possibilities for many further improvements in most packaging fields. Only by these improvements can manufacturers maintain low cost packaging, keep loss and damage claims down to a minimum, afford finer protection and actually lower shipping costs to the consumer. This applies whether the shipments are Diesel parts, candy, or fragile electric bulbs.

Examples of Weight Saving through Engineered Packaging

Part	Old packing weight	New packing weight	Saving (lb.)
Cylinder liner	165 lb.	150 lb.	15
Cylinder head assembly	165 lb.	145 lb.	20
Fork rod	90 lb.	67 lb.	23
Blade rod	65 lb.	36 lb.	29
Voltage regulator	125 lb.	97 lb.	28

Bill Schmidt in Britain — Chapter II

LONDON, JULY 27

DEAR BOSS:

I suppose that most American railroaders would want to know what it is like—working for a nationalized outfit? Although my stay here has been too short for me to pontificate, I should say that working for the British Railways is very much like being with the old pre-1948 company—except that many decisions made by you or your long-time boss are countermanded by several layers of authorities superimposed above, most of whom you've never heard of before. In general, superintendents still have their old districts; traffic managers still run their old stations and agencies, ride herd on solicitors ("canvassers") and listen to shippers' complaints *ad infinitum*.

While they are supposed to be working, in order of importance, for Britain, the British Transport Commission and British Railways, deep down they are still working for the L.M.S., G.W.R., Southern or L.N.E., trying to get the customers to think well of, and route via, their, as compared with some other, "region" of the nationalized system. And despite the fact that there is "in the works" a plan for putting out and requiring the use of best service routes, regardless of region or traffic channels of the old private companies, the shippers are still going to want to send their business by the time-honored way.

Integration a Long Way Off

In theory, the railroad traffic representatives are supposed now "to attend Sunday school," as one observer put it wryly. If there is any hard selling to be done, it must be against private road transport, since solicitation against the common carrier trucks, in process of nationalization, and the inland waterways, already taken over by a separate "executive" under the Transport Commission, is frowned on by the latter. But lifelong training and experience cannot so easily be disposed of. As one officer puts it: "If you want to get my staff to stop working—in spirit—for the old company, you'll have to take them out and shoot them."

Since man is pretty much a creature of custom, real integration of the British rail network is, in my opinion, a long way off.

Even if the overlords were to scramble the egg thoroughly, a uniform, brand-new omelet would not come forth. The fact is, no real scrambling has yet been attempted or announced—a policy which, it strikes me, is a wise one.

It is significant that, although amalgamation of the British roads in the four main-line companies was put through in 1923, officers and employees of the London, Midland & Scottish (now Midland Region) still talk of "Midland railway men" and "London & Northwestern men" and the Southern still has "Chatham locomotives" and "Brighton locomotives."

Regional Differences Still Persist

How nationalization affects the individual railroad officer in the new Northeastern region, with headquarters at York, which was carved principally out of the former London & Northeastern, and the new Scottish region, with principal offices in Glasgow, made up of lines formerly worked by the L.M.S. and L. & N. E., respectively, I haven't yet an inkling, because I haven't yet been in those districts. But I should guess that the men staffing these new entities feel the impact—for better or worse—more than those, say, on the Southern, where the organization and physical properties were left almost entirely intact.

The big and little differences in organization, operation and services among the old four main-line companies persist, for the most part. For example, music is broadcast in the concourses of several Southern stations in London, while the terminals of the other regions are silent. Western region engines bear train numbers on their front ends; the locomotives of other regions do not. Numerous freight station signs proclaim the peculiar advantages of using the old company's express service—"overnight service to all points."

To cite more important matters, the divisions of authority still vary from region to region, as of yore, especially with regard to jurisdiction of passenger traffic, separation of motive power and car departments, responsibility for roadway machinery maintenance, and authority over motive

power operation and servicing, compared with design, manufacture and repair.

The announced aim of the "Railway Executive" (directing the whole railway network) is to change all this; standardize procedures and organization; forge one big railroad. Since Nationalization Day, a little more than 18 months ago, uniformity has started to flow *down* from the Railway Executive to the regions, but most of it takes the form of policy and program rather than actual fact.

Among the most important consequences of this standardization program are the uniform colors (or "liveries") now being applied to all rolling stock as it goes through the shops, based chiefly on the class of service; experimentation with standard all-steel first and third class coaches; joint advertising programs; use of the fine new Rugby locomotive testing station (planned originally by the L.M.S. and L. & N. E. as a joint facility) for the railroad network as a whole; and, most important, the announced decision to use American-type flat-bottom rail, with tie-plates and spikes, in future rail renewals.

Employee Attitudes

The new policy with regard to rail, I understand, was arrived at with great speed and to the great surprise, and, in some instances, consternation, of railroad officers here. It means a complete reversal of British roadway engineering practice.

Because it will take some time for the rolling mills to adapt their machinery to the new rail section, probably not more than 30 per cent of the new steel laid in the immediate future will be flat-bottom, but ultimately, all British railroads will be direct-spiked to the ties, without the traditional rail chairs and bolts. The decision, so far as I can learn, was based on fairly long experience with flat-bottom rail on short test stretches, and is aimed principally at reducing maintenance costs, which, because of steep increases in wage rates of roadway laborers, have become a pressing problem. The view that rail and fastenings lend themselves better to mechanization apparently won the day.

Much of the hubbub you read about in the daily papers having to do with "slow-downs" by employees—some of which are accomplished by adhering literally to safety and procedural rules or "working to rules," as it is described—arises not so much from specific grievances regarding "away-from-home-terminal" runs or denial of wage demands, as from inner disappointment among certain elements of the rank-and-file that the railroads were not turned over to the employees for exploitation, but were made public property. Top union leaders are now identified with the party in power—in short, the government—which has the responsibility of making the nationalized enterprises work. Their loyalty has shifted from the "grab-for-my-boys" motive to the success of the socialist empire as a whole. Hence, the undercurrent of revolt against the managements of nationalized industries like the railroads is, generally, local and spasmodic in nature, arising from dissatisfaction in the ranks. Today, for example, the work-to-rules slow-down in London was limited to one freighthouse.

Labor Leaders' Position

This "transmigration" of labor leaders from representation of particular workers to posts of responsibility in management does not, of course, insure efficient business direction necessarily, but it does comprehend a very significant reversal in attitude, which bears watching. Some former labor leaders who now hold high posts with the Transport Commission and the Railway Executive, respectively, have been "Christianized" to a certain extent; in the recent negotiations over wages on the railroads they appear to have a fair idea that the public need for transport at reasonable rates is incompatible with union raids on transportation revenues.

I would venture the personal opinion that the usual accoutrements of civil service bureaucracy—political favoritism, promotion for reasons other than productivity, lack of interest in technical advances and in net economic worth from the enterprise—may penetrate the British railways slowly from the outside, to the top and downwards. Because they have to keep the customers quiet—particularly in a country where individual use of railroad passenger service is almost universal—the top politicians are not turning over the railroad applecart—yet—but they are beginning to thresh about in the rarefied atmosphere at top levels, looking for "plums."

I continue to wonder at the efficiency with which heavy seasonal passenger traffic is handled here in Britain. Railroad officers may, as they say, spend most of their time "trying to keep our heads above the sea of paper which nationalization has brought," and to dodge the aftermath of what one wag calls "The Dissolution," but they manage to put in some first class railroading on the side.

I'm off for Scotland tomorrow and will be kept busy on the rails right up to sailing time on August 9. I'm having the time of my life, despite the fact that I've done virtually no sightseeing.

As a matter of fact, working with the English on subjects of mutual interest is a hell of a lot more interesting than looking at them as a tourist.

Your Meandering Leg-Man,
BILL

FORERUNNER OF TRAIN RADIO?

The following advertisement appeared in the book entitled

THE VOSBURG TUNNEL
A DESCRIPTION OF THE CONSTRUCTION
Published with the permission of the
Lehigh Valley Railroad Company
by Leo Von Rosenberg
35 Broadway, New York
1887

TRAIN TELEGRAPHY
in Daily Use on the
LEHIGH VALLEY RAILROAD

The system of telegraphing by what is known as "Induction Electrical Telegraphy to and from moving trains," which has been established on the Lehigh Valley Railroad, was inspected on the afternoon of October 6, by a number of well-known railway officials, electricians and scientists. A special train, consisting of half a dozen passenger cars, including the directors' car, the occupants being the invited guests of the Consolidated Railway Telegraph Co. of New York, was run from Jersey City to Easton and return, and numerous telegraphic messages were transmitted and received. Telegraphic communication is maintained by connecting a telegraph instrument on the car with a small battery and with the metallic roof of the car. The line wire is placed upon short poles along one side of the track at a distance of about ten feet from the line. By means of the inductive current messages were sent and received, notwithstanding the clear air space of from ten to twenty feet which existed between the car roof and line wire as freely as if there was a direct metallic contact.

The element of safety and convenience to travelers, which would be introduced by the general adoption of this system is so obvious as to require no comment. "The Travelers' Official Guide," for November 1887.

SHORT-RUN STREAMLINERS DOING BETTER THAN EVER

C. of Ga.'s streamliners in sparsely populated territory increased 1949 traffic over 1948

The Central of Georgia's two short-run streamliners, "Nancy Hanks II," (built by American Car & Foundry), and "Man o' War," (built by Budd), now beginning their third year of operation, are continuing at a high level of favor with the traveling public, according to J. D. McCartney, assistant to president.

In two years the trains have handled a total of 650,000 passengers, through what is mostly sparsely populated territory in Georgia. Of this number, the "Nancy's" share has been 350,000 in daily round-trip operation, Savannah-Macon-Atlanta, a distance of 294 miles; and "Man o' War," 300,000 on a two-round-trips-a-day schedule between Columbus and Atlanta, 117 miles apart.

These streamliners have enjoyed a "phenomenal success," the road states, from the date of their inauguration in the summer of 1947, and have, for most months in 1949, showed increases in passenger patronage over the same periods in 1948. This is in the face of a general traffic decline on the C. of Ga.

Sold on "Package Idea"

The streamliners were inaugurated with what might be called a "package" idea—consisting of low round-trip fares, luxury streamlined service, multi-stops, and "on-time" performance. C. of Ga. officers, in reviewing streamliner operations of the past two years, are in agreement that the success has not been due to any single one of these factors, but to the combination, or the "package." In fact, when they planned the inauguration of streamline service, they were of the opinion that the mere purchase of luxury trains did not necessarily guarantee heavy patronage.

Accordingly, the road put into effect low round-trip, five-day limit fares, between points on line, intrastate in Georgia. These round-trip fares were computed by adding 20 per cent to the one-way rate. Central officers also believed that excessive speed was not essential, at least in the territory through which these streamliners were to travel, but that reasonable speed and service were necessary to supplement low fares and streamlined equipment. Therefore, "Nancy Hanks" makes eight stops, and "Man o' War," six, some of them at comparatively small towns.

"On-time" performance has been high, and many patrons have come to regard streamliners as symbols of dependability. "Nancy Hanks," on the daily round-trip run of 588 miles, has, in the past 12 months, for example, been 97 per cent on time.

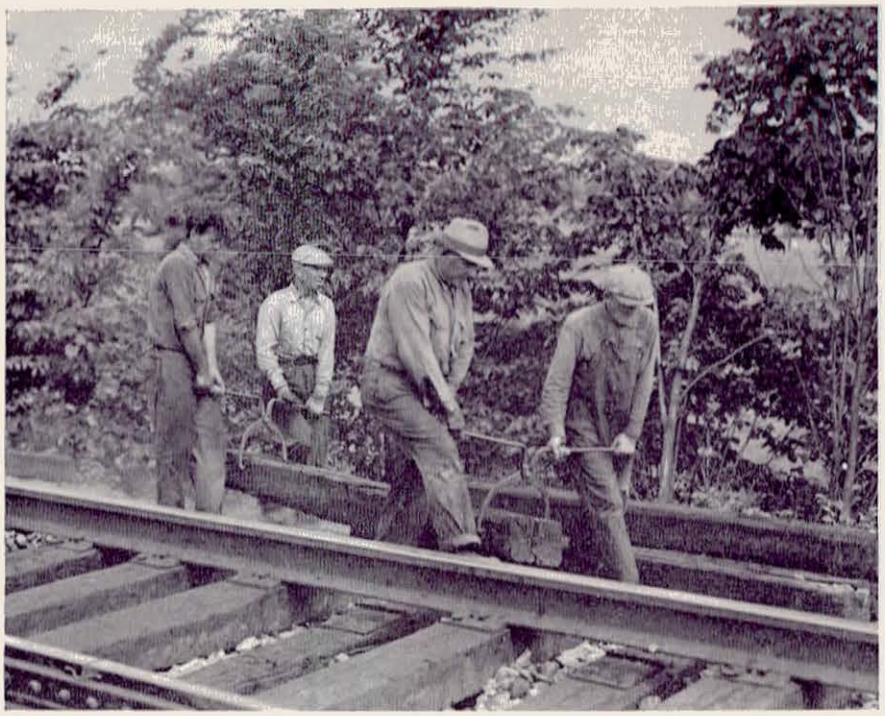
Presentation of plastic bibs for children who ride "Nancy Hanks II" and "Man o' War" is but one of many promotional devices which have served to boost patronage on the short-run streamliners to higher levels, in face of a general decline in railroad business

In addition to the "package" offered passengers, the total success of the two streamliners is due in great part to the active promotional campaign which was begun months before the service was inaugurated, as described in *Railway Age* of June 5, 1948, page 57.

Free demonstration trips aboard the streamliners have created interest in rail travel among school children, and as a result, many organized groups of children have taken regular trips to Atlanta to see such points of interest as their state capitol, the famous cyclorama painting of the War between the States, and the zoo.

Personalized Service

Contributing to heavy patronage is the personalized service rendered by the train staffs. They are encouraged to treat passengers as they would guests in their homes, and the road's management never misses an opportunity to bring complimentary letters to the attention of all personnel concerned. Further, the company furnishes conductors, porters, and others with individual business cards, which carry on them the streamliner's name. Porter Charlie Linton, on "Man o' War," was the first employee to receive the courtesy award given by the Federation of Railway Progress in 1948. Attention to the "kid angle" has also paid off in increased patronage. Baby food is served, and a full-time maid is on duty to warm the babies' milk and to assist mothers in other ways. Children who are served in the grill car are given a plastic bib showing the streamliner, and reading: "I rode Nancy Hanks (or Man o' War)."



Because of the almost universal use of preservatives ties in track are lasting longer, as proved by the decline in tie renewals in recent years

Tie Renewals Declined Again in 1948

Replacements reported by Class I roads in United States and Canada continued the downward trend started in 1945

Tie renewals by the Class I railroads in the United States and Canada during 1948 amounted to 43,692,043, a reduction of 654,525 ties, or 1.5 per cent, as compared with 1947. A majority of the individual roads, however, reported an increase in tie renewals; 70 installed more ties in 1948 than they did in 1947, while 58 renewed fewer ties last year.

Continuing a trend that has been in evidence for several years, tie renewals in the United States slipped further in 1948, reaching a lower level than in any other year for which figures are available. In that year the Class I roads inserted 35,023,752 new treated wood ties, 1,547,181 new untreated wood ties, 270,411 second-hand ties, and 740 ties other than wood, making a grand total of 36,842,084 ties of all classes installed in 1948. This total is 447,588 ties, or 1.2 per cent, less than the 37,289,672 ties inserted in 1947, which was the previous low. Last year three roads in Canada applied 6,849,959 ties, a decrease of 206,937, or 2.9 per cent, as compared with 1947.

Tie renewals in the United States and Canada have now shown decreases for four successive years. The decrease in 1945 amounted to 8.4 per cent; in 1946, 14.4 per cent; in 1947, 0.76 per cent; and in 1948, 1.5 per cent. The most important factor in this long downward trend undoubtedly has been the almost universal practice of treating ties with preservatives.

Outstanding Individual Scores

The comparisons above are drawn from the tabulation of statistics of tie renewals compiled for the Committee on Ties of the American Railway Engineering Association by the Bureau of Railway Economics of the Association of American Railroads, and are based on reports made to the Interstate Commerce Com-

Statistics of Crosstie Renewals on Leading Railroads in the United States and Canada for the Calendar Year Ending December 31, 1948

Road	Miles of maintained track occupied by crossties	Total number of new wood crossties laid in replacement in 1948	Number of wood crosstie renewals per mile of maintained track		Per cent of wood crosstie renewals to all ties in track		Average cost of new wood ties treated	Estimated total crossties in all maintained tracks	Cost of new wood cross-tie renewals per mile of maintained track	Cost of new wood crosstie renewals per thousand equated gross ton-miles (cents)
			1948	5-year average	1948	5-year average				
New England Region:										
Bangor & Aroostook	830.75	155,589	187	154	6.5	5.4	$3.02	2,388,901	$297	11.58
Boston & Maine	2,871.96	174,929	61	57	2.1	1.9	2.98	8,472,282	181	3.13
Canadian Nat. Lines in New Eng.	235.32	25,727	109	109	3.5	3.5	2.15	744,818	229	9.00
Canadian Pac. (lines in Me.)	216.42	22,905	106	86	3.6	2.8	2.33	630,146	242	2.53
Canadian Pac. (lines in Vt.)	125.49	6,928	55	84	1.8	2.8	2.05	377,049	110	1.88
Central Vermont	494.48	24,136	49	37	1.7	1.3	2.86	1,462,753	139	3.10
Maine Central	1,189.08	160,049	135	118	4.5	3.9	3.57	3,557,525	353	8.89
New York Connecting	25.90	3,025	117	108	3.7	3.4	4.02	81,641	470	3.17
New York, New Haven & Hart'd	3,751.19	305,210	81	86	2.6	2.7	2.95	11,742,208	240	3.63
Rutland	486.09	21,667	45	44	1.4	1.4	2.62	1,511,200	117	3.65
Total	10,226.68	900,165	88	83	2.9	2.7	2.97	30,968,523	230	4.20
Great Lakes Region:										
Ann Arbor	402.78	41,634	103	100	3.4	3.3	2.86	1,221,418	296	6.44
Cambria & Indiana	56.54	1,943	34	123	1.2	4.3	2.91	163,032	100	4.25
Delaware & Hudson	1,356.00	167,405	123	128	3.9	4.1	3.11	4,261,843	384	3.42
Delaware, Lack. & Western	2,173.73	217,750	100	83	3.5	2.9	3.07	6,304,517	303	3.77
Detroit & Mackinac	273.96	47,926	175	118	5.8	3.9	2.39	819,795	365	35.99
Detroit & Toledo Shore Line	149.25	7,241	49	57	1.6	1.9	3.16	450,292	153	2.81
Erie	4,706.63	363,456	77	72	2.6	2.4	3.07	13,873,024	237	2.66
Grank Trunk Western	1,853.40	209,941	113	131	3.6	4.1	2.58	5,876,110	292	5.07
Lehigh & Hudson River	111.63	10,337	93	96	3.4	3.6	3.55	300,000	295	3.91
Lehigh & New England	243.91	23,754	97	68	3.2	2.2	3.41	738,956	332	7.26
Lehigh Valley	2,582.94	256,444	99	93	3.3	3.1	3.37	7,709,033	334	5.50
Monongahela	239.51	16,656	70	93	2.4	3.2	3.03	697,861	211	3.44
Montour	72.58	801	11	71	0.4	2.5	3.58	209,022	36	0.87
New York Central	20,949.94	2,083,926	99	108	3.2	3.5	3.10	64,122,070	309	3.44
New York, Chicago & St. Louis	2,544.91	286,520	113	146	3.6	4.6	2.97	8,016,467	$35	3.25
New York, Ontario & Western	699.71	...	...	2	...	0.1	...	1,986,106	...	...
New York, Susq. & Western	212.61	12,069	57	42	2.0	1.4	3.15	617,501	179	9.79
Pittsburgh & Lake Erie	814.31	91,340	112	101	3.7	3.4	3.09	2,497,423	346	5.12
Pittsburg & Shawmut	118.56	26,422	223	184	8.0	6.5	3.05	331,669	679	18.12
Pittsburgh & West Virginia	181.11	11,581	64	96	2.1	3.2	3.31	550,943	212	2.98
Wabash	3,172.24	304,456	96	106	3.1	3.4	2.98	9,873,541	286	3.46
Total	42,916.25	4,181,602	97	103	3.2	3.2	3.06	130,620,623	298	3.58
Central Eastern Region:										
Akron, Canton & Youngstown	215.08	37,960	176	213	5.8	7.3	1.15	649,140	468	12.14
Baltimore & Ohio	10,365.93	1,095,350	106	133	3.7	4.7	2.69	29,570,623	284	3.03
Bessemer & Lake Erie	486.49	12,920	27	31	0.9	1.0	3.57	1,513,611	95	0.91
Central R. R. of New Jersey	916.84	81,876	89	98	3.2	3.5	2.80	2,577,479	250	4.06
Central R. R. of Pennsylvania	467.74	47,259	101	*	3.6	*	3.32	1,315,021	336	4.41
Chicago & Eastern Illinois	1,320.76	110,651	84	106	2.8	3.4	2.53	4,019,500	212	3.62
Chicago & Illinois Midland	162.07	29,238	180	161	6.0	5.4	3.25	488,191	586	6.04
Chicago, Ind'polis & Louisville	728.85	122,989	169	96	5.4	3.1	2.70	2,263,512	455	8.43
Detroit, Toledo & Ironton	591.44	45,168	76	60	2.7	2.1	2.65	1,703,347	200	5.29
Elgin, Joliet & Eastern	847.26	69,420	82	96	2.7	3.1	2.47	2,619,164	202	4.40
Illinois Terminal Co.	633.67	56,682	89	84	3.0	2.8	2.35	1,901,010	210	10.39
Long Island	792.03	110,292	139	135	4.9	4.7	3.84	2,257,148	535	8.84
Missouri-Illinois	215.28	56,122	261	213	8.3	6.8	2.16	674,965	562	27.05
Pennsylvania	21,441.84	2,079,811	97	98	3.4	3.4	3.02	61,195,768	293	2.76
Penna.-Read. Seashore Lines	617.73	69,551	113	95	4.1	3.5	3.42	1,678,673	385	12.95
Reading Co.	2,808.14	325,144	116	124	4.1	4.4	2.99	7,856,651	346	4.52
Staten Island Rapid Transit	92.27	6,025	65	75	2.6	2.9	3.02	236,208	197	9.81
Western Maryland	1,163.41	65,994	57	78	2.0	2.7	3.04	3,373,514	172	2.02
Wheeling & Lake Erie	846.98	75,341	89	94	3.0	3.1	2.73	2,545,617	243	3.44
Total	44,713.81	4,497,793	101	103	3.5	3.7	2.91	128,439,142	292	3.23
Pocahontas Region:										
Chesapeake & Ohio	7,824.32	735,936	94	100	3.1	3.3	3.08	23,782,205	289	2.46
Norfolk & Western	4,321.46	577,549	134	94	4.3	3.0	2.70	13,396,526	361	2.88
Rich., Fred. & Potomac	408.69	18,831	46	119	1.6	4.1	2.79	1,195,000	129	0.82
Virginian	936.34	113,102	121	100	3.9	3.2	2.44	2,877,651	295	2.61
Total	13,490.81	1,445,418	107	98	3.5	3.2	2.87	41,251,382	308	2.55
Southern Region:										
Alabama Great Southern	548.04	104,469	191	197	6.3	6.5	3.04	1,659,276	580	6.88
Atlanta & St. Andrews Bay	112.65	14,705	131	**	4.3	**	2.71	340,394	353	8.04
Atlanta & West Point	146.30	22,195	152	195	5.1	6.4	2.66	437,693	403	6.27
Atl. Coast Line (Inc. AB&C)	7,391.62	1,532,996	207	240	6.8	8.1	2.77	22,440,958	551	10.12
Central of Georgia	2,316.00	303,715	131	145	4.5	5.0	2.26	6,698,161	296	6.54
Charleston & West. Carolina	426.92	71,320	167	201	5.8	6.9	2.71	1,233,527	453	16.03
Cin., New Orleans & Tex. Pac.	769.04	110,375	144	93	4.9	3.2	3.19	2,248,941	458	3.48
Clinchfield	418.25	94,894	227	179	7.5	5.9	2.77	1,271,486	526	4.48
Columbus & Greenville	204.61	37,342	183	172	5.8	5.4	2.42	648,204	442	32.56
Florida East Coast	1,149.75	151,684	132	169	4.5	5.8	2.78	3,345,079	343	5.25
Georgia	440.56	57,261	130	156	4.3	5.1	2.47	1,338,076	320	6.63
Georgia & Florida	460.66	101,955	221	237	8.2	8.8	...	1,243,782	312	20.77
Georgia Southern & Florida	466.50	98,644	211	174	6.7	5.6	3.29	1,467,879	452	10.31
Gulf, Mobile & Ohio	3,788.88	709,605	187	227	6.4	7.4	2.41	11,013,060	451	9.20
Illinois Central	9,812.91	1,893,433	193	209	6.3	6.8	2.43	29,915,118	469	6.91

Footnote references appear on page 50

(Table continued on page 50)

Statistics of Crosstie Renewals on Leading Railroads in the United States and Canada for the Calendar Year Ending December 31, 1948 (Continued)

Road	Miles of maintained track occupied by crossties	Total number of new wood crossties laid in replacement in 1948	Number of wood crosstie renewals per mile of maintained track		Per cent of wood crosstie renewals to all ties in track		Average cost of new wood ties treated	Estimated total crossties in all maintained tracks	Cost of new wood crosstie renewals per mile of maintained track	Cost of new wood crosstie renewals per thousand equated gross ton-miles (cents)
			1948	5-year average	1948	5-year average				
Southern Region (continued)										
Louisville & Nashville	6,715.62	854,859	127	131	4.4	4.6	2.56	19,215,589	326	4.04
Mississippi Central	173.50	26,628	153	134	4.8	4.2	2.12	551,443	326	17.13
Nashville, Chatt. & St. Louis	1,448.42	112,177	77	134	2.8	4.9	2.40	3,959,980	186	3.08
New Orleans & Northeastern	290.08	65,419	226	231	7.9	8.0	3.02	832,122	680	6.57
Norfolk Southern	820.49	199,801	244	245	8.3	8.4	2.64	2,398,776	498	22.71
Seaboard Air Line	5,361.48	901,870	168	181	5.6	6.0	2.53	16,214,565	426	6.23
Southern Ry.	8,550.03	1,044,906	122	135	3.9	4.4	3.01	26,510,072	367	5.43
Tennessee Central	342.99	53,371	157	147	5.2	4.9	2.55	1,038,574	295	9.94
Western Ry. of Alabama	188.97	25,569	135	185	4.5	6.1	2.65	566,833	358	6.27
Total	52,344.27	8,589,693	164	181	5.5	6.0	2.62	156,589,588	419	6.54
Northwestern Region:										
Chicago & North Western	11,185.40	1,233,681	110	118	3.7	4.0	2.46	33,172,123	268	6.06
Chicago Great Western	1,874.17	339,446	181	155	6.1	5.2	2.97	5,557,697	495	9.00
Chicago, Milw., St. Paul & Pac.	13,556.87	1,383,068	102	135	3.3	4.4	2.55	41,925,617	248	5.15
Chicago, St. P., Minpls. & Omaha	2,148.45	246,691	115	124	3.9	4.2	2.70	6,370,205	309	7.94
Duluth, Missabe & Iron Range	1,104.20	77,312	70	69	2.4	2.3	2.49	3,289,412	172	2.42
Duluth, South Shore & Atl.	517.11	77,776	150	145	5.1	4.8	2.37	1,516,591	338	11.94
Duluth, Winnipeg & Pacific	206.00	51,748	251	300	8.5	10.2	2.41	607,593	582	12.35
Great Northern	10,260.44	1,266,023	123	132	4.0	4.3	2.31	31,585,676	284	5.24
Green Bay & Western	274.04	38,553	141	202	4.4	6.7	3.19	882,316	378	16.82
Lake Superior & Ishpeming	233.82	39,824	170	155	5.7	5.2	3.26	701,460	348	41.07
Minneapolis & St. Louis	1,560.02	294,879	189	146	6.3	4.9	2.59	4,706,139	447	16.24
Minpls., St. Paul & SS Marie	4,803.04	529,826	110	100	3.7	3.4	2.33	14,430,831	254	7.65
Northern Pacific	9,242.39	641,921	69	79	2.4	2.7	2.18	26,829,036	151	3.20
Spokane International	176.50	53,873	305	337	10.5	11.6	...	513,700	433	23.08
Spokane, Portland & Seattle	1,133.49	125,690	111	225	3.6	7.4	2.69	3,504,262	294	5.13
Total	58,275.94	6,400,311	110	122	3.6	4.0	2.45	175,592,658	262	5.63
Central Western Region:										
Atchison, Topeka & Santa Fe	19,271.82	1,707,094	89	87	2.9	2.9	2.26	59,622,893	200	2.43
Chicago, Burlington & Quincy	11,853.01	945,217	80	126	2.6	4.1	2.31	36,602,095	184	3.14
Chicago, Rock Island & Pac.	9,537.50	1,029,990	108	119	3.6	4.0	2.17	28,486,807	234	4.11
Colorado & Southern	823.02	70,428	86	97	2.9	3.2	2.57	2,466,202	220	4.78
Colorado & Wyoming	106.29	4,042	38	46	1.3	1.6	3.67	311,452	139	37.61
Denver & Rio Grande Western	3,418.82	137,465	40	39	1.3	1.3	2.80	10,663,500	112	2.04
Fort Worth & Denver City	1,032.17	106,444	103	122	3.5	4.1	2.56	3,072,345	264	6.52
Northwestern Pacific	421.77	57,724	137	186	4.7	6.4	2.81	1,219,956	359	9.65
Sacramento Northern	314.02	56,405	180	***	6.0	***	...	947,740	429	104.14
Southern Pac. Co.-Pac. Lines	11,854.71	885,907	75	111	2.4	3.6	2.59	36,808,775	193	1.80
Toledo, Peoria & Western	277.23	14,743	53	****	1.7	****	2.10	878,265	112	3.88
Union Pacific	13,191.21	642,801	49	99	1.7	3.5	2.49	37,262,958	121	1.25
Utah	71.31	11,007	154	104	5.5	3.7	3.49	200,394	463	8.41
Western Pacific	1,535.08	319,784	208	247	7.0	8.3	2.38	4,562,637	435	5.66
Total	73,707.96	5,989,051	81	106	2.7	3.5	2.36	223,106,019	190	2.42
Southwestern Region:										
Beaumont, Sour Lake & West.	109.15	24,453	224	196	7.5	6.6	2.59	327,500	581	3.43
Burlington-Rock Island	178.35	24,650	138	125	4.4	4.0	2.60	558,235	360	6.15
International-Great Northern	1,421.88	193,267	136	128	4.5	4.3	2.43	4,261,400	330	5.30
Kansas City Southern	1,275.81	83,294	65	105	2.1	3.3	2.38	4,038,914	156	1.89
Kansas, Oklahoma & Gulf	350.56	26,031	74	59	2.5	2.0	2.48	1,036,385	184	4.13
Louisiana & Arkansas	877.49	40,790	46	156	1.4	4.8	2.21	2,856,870	103	2.13
Midland Valley	355.57	27,291	77	61	2.6	2.1	2.36	1,053,085	181	15.76
Missouri-Kansas-Texas Lines	3,911.34	365,348	93	155	3.0	4.9	2.52	12,308,900	235	4.05
Missouri Pacific	8,899.08	1,458,715	164	124	5.3	4.0	2.32	27,451,451	380	5.30
New Orleans, Texas & Mexico	227.53	34,945	154	143	5.0	4.7	2.57	696,000	394	5.45
Oklahoma City-Ada-Atoka	137.00	27,168	198	231	6.9	8.0	2.58	394,618	511	60.25
St. Louis, Brownsville & Mexico	767.97	99,844	130	153	4.3	5.1	2.36	2,323,100	307	5.78
St. Louis-San Francisco	6,229.06	743,422	119	120	3.8	3.8	2.27	19,611,740	270	5.39
St. Louis, San Francisco & Tex.	148.92	18,589	125	103	4.0	3.3	2.33	466,426	290	5.28
St. Louis Southwestern Lines	1,859.23	304,615	164	182	5.3	5.8	2.48	5,777,994	407	4.76
San Antonio, Uvalde & Gulf	355.25	35,916	101	131	3.5	4.6	2.38	1,024,500	241	11.69
Texas & New Orleans	5,547.35	634,435	114	118	4.2	4.3	2.44	15,279,717	279	4.69
Texas & Pacific	2,274.75	389,531	171	190	5.9	6.5	2.52	6,649,950	432	4.40
Texas-Mexican	209.98	34,596	165	115	5.2	3.6	2.52	665,217	391	33.46
Total	35,136.27	4,566,900	130	135	4.3	4.4	2.39	106,782,002	310	4.84
Grand Total—United States	330,811.99	36,570,933	111	122	3.7	4.1	2.63	993,349,937	286	3.95
Canadian Roads:										
Canadian National	26,844.00	3,631,254	135	151	4.6	5.2	2.11	78,621,832	257	a
Canadian Pacific	21,085.00	3,040,008	144	147	5.0	5.1	2.15	60,987,366	291	6.06
Ontario Northland	679.70	178,697	263	207	9.1	7.1	2.61	1,970,550	459	1.97

†These are storekeepers' average costs for the ties charged out and used. They are not actual costs or the price paid for ties purchased during the period.

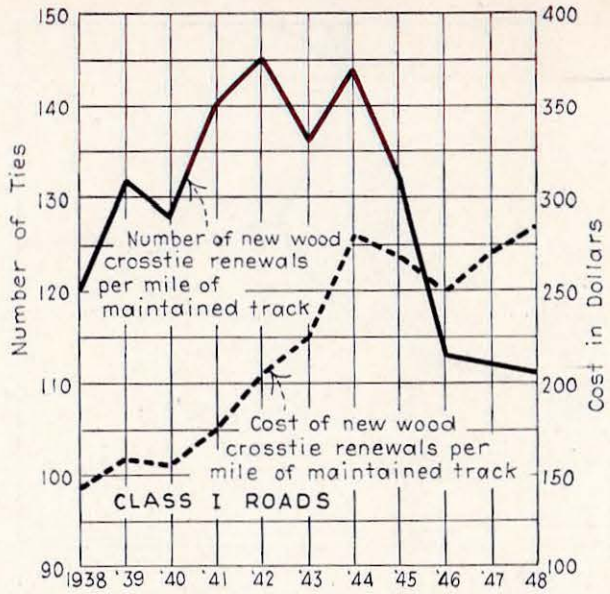
*The Central of Pennsylvania commenced operations in August, 1946; formerly part of the Central of New Jersey.

**The Atlanta & St. Andrews Bay became a Class I road January 1, 1947; formerly a Class II road.

***The Sacramento Northern became a Class I road January 1, 1948; formerly a Class I electric road.

****The Toledo, Peoria & Western made no report for 1945 and 1946.

aNot reported.



Showing the trend of tie renewals and tie-renewal costs per mile of maintained track from 1938 to 1948

mission by the roads in the United States, and directly to the bureau by the Canadian roads. These statistics are reproduced here in condensed form.

The figures for 1948 are based on reports from 129 roads, including the Sacramento Northern, which became a Class I road on January 1, 1948. Of the roads reporting, 126 are in the United States and 3 are in Canada.

The decline in the total number of ties installed in 1948 was reflected in a decrease in that year of one tie (112 to 111) in the average number of new wood ties installed per mile of maintained track. On the other hand some roads made tie renewals at substantially increased rates over 1947. Among these were the Ontario Northland (167 to 263), Texas-Mexican (81 to 165), Pittsburg & Shawmut (153 to 223), Chicago & Illinois Midland (114 to 180), and Beaumont, Sour Lake & Western (161 to 224).

Roads on which substantial decreases in tie renewals per mile of track were reported included the Western Pacific (348 to 208), the Louisiana & Arkansas (130 to 46), the Montour (87 to 11), the Florida East Coast (195 to 132), and the Spokane, Portland & Seattle (169 to 111).

From a regional standpoint the statistics show that installations of new wood ties per mile of track increased in the New England region (86 to 88), the Great Lakes region (83 to 97), the Central Eastern region (94 to 101), and the Pocahontas region (96 to 107). Decreases occurred in the Southern region (178 to 164), the Northwestern region (117 to 110), the Central Western region (86 to 81), and the Southwestern region (135 to 130).

During 1948, 71 roads used treated ties exclusively in making tie renewals—the highest number since 1944, when it was also 71. In 1947, 49 roads reported using such ties exclusively, in 1946, 63, and in 1945, 66. Only four roads used no treated ties in 1948. Of the roads using both treated and untreated ties, only seven reported using more untreated ties than treated.

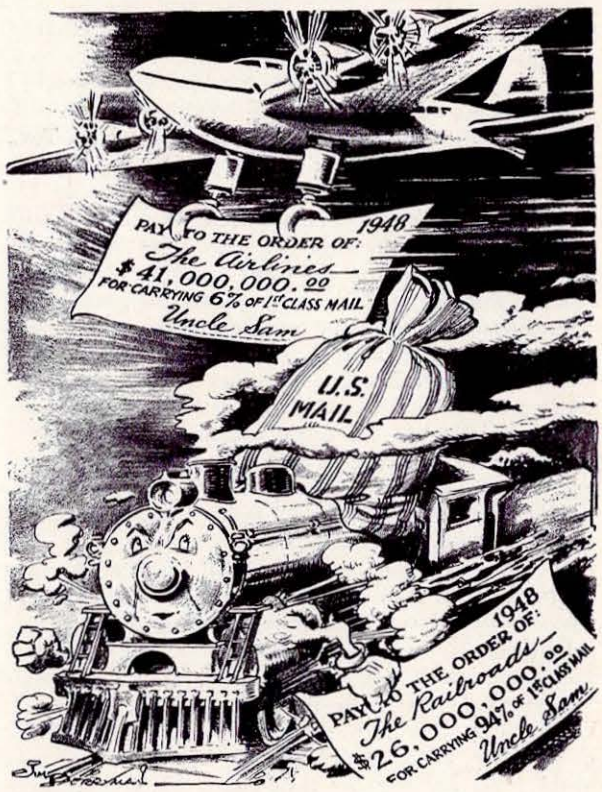
Slight Decrease in Treated Ties

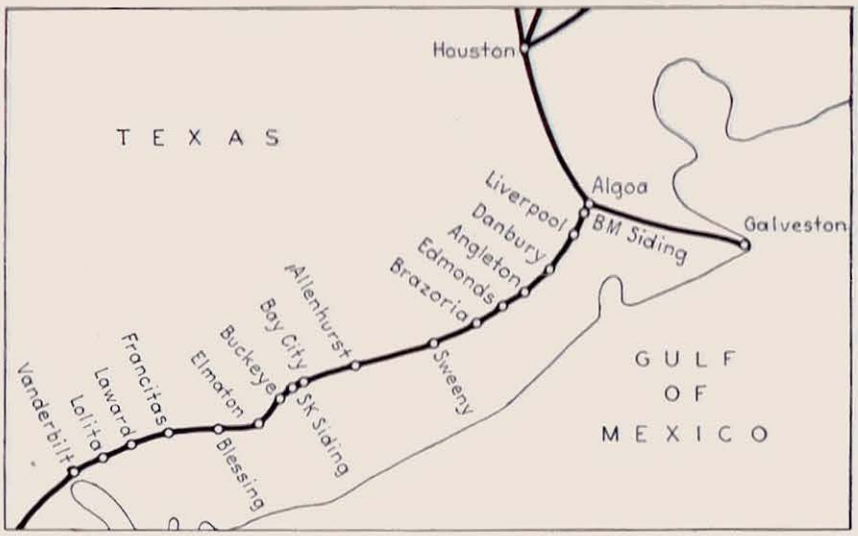
The 35,023,752 new treated wood ties inserted by the reporting roads in the United States last year represented a decrease of 276,051 ties, or 0.78 per cent, below the corresponding figure for 1947. On the other hand, the number of untreated ties used in 1948 decreased 14 per cent. As a result the ratio of new treated wood ties to all ties increased from 94.7 per cent in 1947 to 95.1 per cent in 1948. This ratio was 94.3 per cent in 1946, 94.0 per cent in 1945, 93.4 per cent in 1944, 91 per cent in 1943, and 89 per cent in 1942. The number of second-hand and substitute ties inserted in 1948 increased 41 per cent; even so, such ties represented less than one per cent of the total.

Two indices of tie-renewal costs are shown in the last two columns of the accompanying table. One of these gives the cost of tie renewals per mile of maintained track, and the final column gives the cost of wood crossties per thousand equated gross ton-miles of traffic carried. In this connection, because of the wide variations in general practices, kind and volume of traffic, and general maintenance conditions between different sections of the country, considerable caution should be observed in comparing tie costs on one railway with those on another.

The data in the accompanying table cover a total of 330,811.99 mi. of maintained track in the United States, compared with 330,350.95 mi. in 1947.

THE BIG JOB GETS THE SMALL CHECK





Map of territory between Houston and Vanderbilt

C. T. C. Saves Three Hours on 132-Mile Run

New signaling on the Gulf Coast Lines saves 1.5 min. on each mile for through freights — This and other economies amount to $149,000 annually to pay for project in six years

As a means of improving the safety of operations and of expediting important trains about three hours, centralized traffic control has been installed on a complete 132-mi. single-track operating subdivision of the Missouri Pacific's Gulf Coast Lines between Houston, Tex., and Vanderbilt. This territory is part of the 372-mi. route between Houston and Brownsville, Tex., in the lower Rio Grande valley. The line taps an extensive area producing large quantities of vegetables and citrus fruits, as well as cattle and other agricultural products that are shipped north and east through Houston.

Previously, there was no signaling on this subdivision, the switches being hand-thrown, and train movements being authorized by timetable and train orders. According to an analysis of train operations made by operating officers and the signal engineer, the centralized traffic control has been effective in saving about one and a half minutes for each mile for each through freight train during the heavy traffic seasons, thus saving about 3 hr. on the subdivision. From Houston, most all of these cars move east and north over the Missouri Pacific lines to New Orleans, Memphis, St. Louis and Kansas City. Thus, the three hours saved on the C.T.C. subdivision in Texas means that the cars arrive at destinations or connections that much sooner, which results in improved service to the shippers. Looking at it another way, the C.T.C. saves each year a total of approximately 8,400 train-hours on regular time, and about 1,300 hr. overtime train-hours, which represents a saving of about $105,000 annually. The saving in per diem charges on cars, effected by getting trains over the road more quickly, totals about $16,900 annually. Other reductions in operating expenses amount to about $27,200, so that the total saving is approximately $149,000 annually, which means that the C.T.C. will pay for itself, including track changes, in five or six years.

Between Houston and Algoa, Tex., 28.6 mi., the trains of the Missouri Pacific are operated over a single-track line of the Santa Fe which is equipped with centralized traffic control, as is also the 103.1 mi. of single track of the Missouri Pacific between Algoa and Vanderbilt. Thus, on the entire 132-mi. operating subdivision, Missouri Pacific trains have the benefit of complete centralized traffic control, including power-operated siding switches and signals for authorizing train movements without the use of train orders.

Tangent and Level Track

Between Algoa and Vanderbilt, the railroad traverses a coastal plain, the distance from the coast ranging from 10 to 25 mi. The elevation varies from about 25 ft. to 55 ft. above sea level, these changes being very gradual, so that for practical purposes the grade may be considered level. There are few curves, all of which are slight. There is one tangent section of 19 mi. and another of 10 mi. Thus, the tonnage and speeds of trains are not affected by grades or curves.

The number of trains operated daily on this line may vary from a minimum of about 12 to a maximum of about 26. These include 4 passenger trains, 2 local freights, 6 scheduled through freights and 4 to as many as 14 extra through freight trains. The perishable traffic season extends roughly from October to June, during most of which time there is an average of about 24 trains daily.

Longer and Fewer Sidings

As a part of the improvement program, the sidings which were to be equipped with power switch machines were lengthened to 125-car capacity, these including Algoa ("BM"), Liverpool, Danbury, Angleton, Brazoria, Sweeny, Edmonds, Allenhurst, Bay City, Buckey, Blessing, Francitas and Laward. Thus, in the 102.7 mi. between Algoa and Vanderbilt there are 12 sidings.

At various spurs and short sidings, to be used only by the local freight trains when switching, the hand-throw switch stands were left in place and were equipped with electric locks. At each of these turnouts, a Hayes derail, at clearance point, is pipe-connected to the switch. Special work was done to reduce the number of these hand-throw switches; for example, at Abercrombie, one switch of a previous siding was removed, leaving a spur to serve the freighthouse.

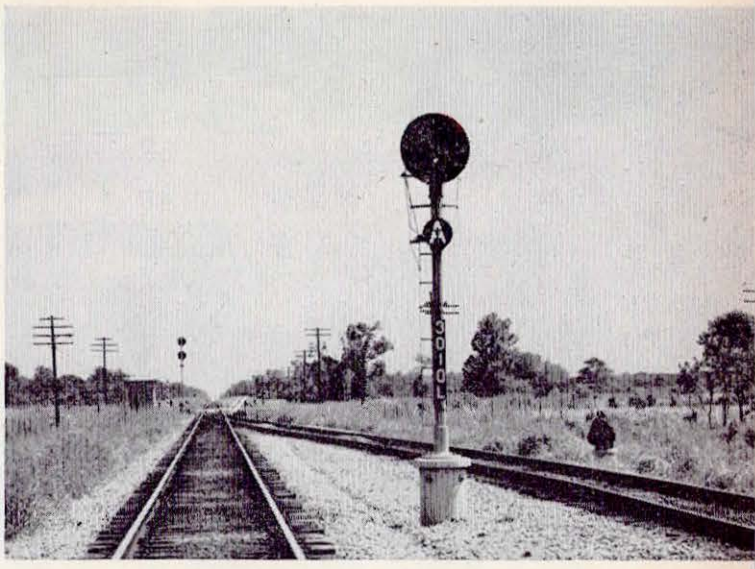
At Blessing an interchange track extending to the Southern Pacific was changed to connect the Missouri Pacific end to a siding rather than to the main track. A similar change at Bay City eliminated one main-track switch.

Control at Angleton

The 103 mi. of C.T.C. between Algoa and Vanderbilt is controlled by one machine located in an office at Angleton, at which point there is a crossing with another single-track line of the Missouri Pacific extending between Houston and Freeport, Tex. The C.T.C. system includes interlocking signal protection for this crossing, replacing a mechanical interlocking plant. In addition to the conventional track diagram and signal and switch levers on the C.T.C. machine, some additional levers are provided for the control of electric locks on hand-throw switches which are not in station limits.

The signals on this project are the color-light type, arranged to display standard Signal Section aspects. Each absolute signal is so designated by a reflectorized marker displaying the letter "A." Each signal is at the immediate right of the track governed. This means that at either one end or the other, a siding is thrown over to 20-ft. centers to allow clearance for the station-leaving main-track signal to be located between the siding and the main track. The leave-siding signals are three-aspect dwarfs.

This centralized traffic control between Algoa and Vanderbilt was planned and installed by railroad forces under the jurisdiction of L. S. Werthmuller, signal engineer, Missouri Pacific Lines, and H. L. Robertson, assistant signal engineer, Missouri Pacific Lines in Texas, deceased in September, 1948, and succeeded by P. H. Peters. The major items of signaling equipment installed on this territory were furnished by the General Railway Signal Company.

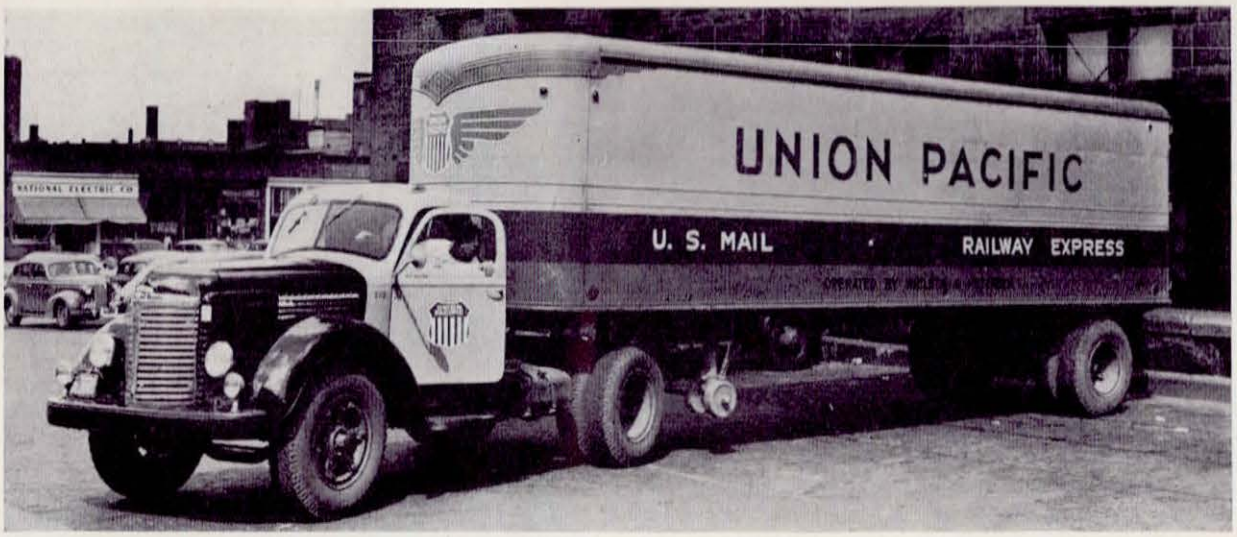


At the north end of Brazoria the siding was thrown over to a 20-ft. center to allow clearance for the main track station-leaving signal

The machine at Angleton controls the C.T.C. on 103 mi. between Algoa and Vanderbilt

A typical power switch at the end of a siding

"You Can Set Your Watch"—



Twenty-eight-foot, five-ton trailers, operating on "split-second" schedules, relieve some passenger trains of head-end business at local stops on a 442-mi. stretch of Union Pacific main line between Omaha, Neb., and Kimball

As many as three hours have been cut from the over-the-road travel time of passenger trains, and mail and express service to smaller towns has been speeded up by as much as 24 hrs., with coordinated highway vehicle service for Union Pacific "head-end" business (except baggage accompanying passengers) formerly handled at local stops by passenger trains. Since the first route was inaugurated in 1947, the service has been built up to cover 660 route miles of line daily in each direction, of which 442 mi. are covered by exclusive head-end runs, while the remainder also carry l.c.l. freight.

Most significant of the U. P.'s successful experiments with highway coordination is the use of trucks exclusively for mail, express, cream and newspapers to relieve heavy, long-distance passenger trains of local stops on the 442-mi. stretch of main line between Omaha, Neb., and Kimball (near the Wyoming border, 65 mi. east of Cheyenne). Colorfully painted, scrupulously maintained five-ton, 28-ft. trailers and tractors maintain tight schedules like passenger trains. Their runs, on the average, call for overall speeds, terminal to terminal, of 40 m.p.h., with station stops averaging five minutes each and running up to 15 minutes. The truck-leasing concern, which furnishes the vehicles to the railroad "ready to roll," gives its drivers special training for the service. They make their first 10 trips with a supervisor, and are duly impressed with the fact that they aren't in freight service—they're carrying the mails of an exacting Uncle Sam. If tire trouble occurs en route, they usually keep going, since the rear tractor and trailer axles have dual wheels. For other types of breakdown, the trucking concern is ready to throw into the breach at any hour other tractors, maintained at key points along the railroad for local pick-up and delivery of U.P. merchandise freight.

Schedules are too fast to give the drivers time in which to do any "paper work," except simple notations in a dispatch report (similar to the record kept en route by baggagemen or mail handlers on passenger trains), recording pouches, bags and sacks of mail picked up and set off. All other records are maintained by railroad station employees.

Mail, express and excess baggage are floored on the trailers separately, and in station order where possible. Specific runs introduce special handling problems which are dealt with on an individual basis. One run, for example, carries an unusually heavy traffic of cream in cans, for which there is provided an intermediate decking at the front of the trailer to permit double tiering. Another run uses a transverse bulkhead to divide the floor space for convenient unloading.

Peddlers Tie In with Trains

The peddler truck service between Omaha and Kimball ties in closely with trains No. 3 and 4, the "Utahn", and No. 15 and 16, the "Columbine." The former, carrying through cars between Omaha and Los Angeles and other West Coast destinations, has been speeded up some three hours with the truck operations, permitting a later departure from Omaha. Nos. 3 and 4 are fast and important trains west of Cheyenne, where they handle the equipment of the streamliner "City of St. Louis." On the westbound

By Railroad's Mail-Express Trucks

Union Pacific makes large cuts in train time with new head-end service

run, therefore, it is very important that head-end delays at local stops between Omaha and Cheyenne be held to the minimum. This has been accomplished by the coordinated truck service, No. 3 regularly arriving at Cheyenne on time to pick up its "City of St. Louis" connection.

The Omaha-Kimball route is covered by a total of five round trip truck runs—end-to-end—scheduled to tie in with Nos. 3, 4, 15 and 16 at key stations. Each is operated daily. One round trip is made between Omaha and Grand Island, 153.6 mi., with key station stops at Fremont and Columbus in each direction. The next is operated between Grand Island and Lexington, 80.9 mi., calling at Kearney for transfers to branch lines extending from that junction. The third runs between Lexington and North Platte, 61.8 mi.; the next between North Platte and Julesburg, 87.3 mi., and the final run between Julesburg and Kimball, 82.7 mi., with an intermediate key stop at Sidney.

Typical of the manner in which these truck runs pick up before, and clean up after, the main-line trains they complement is the example in Table I, which sets forth the departure times of trucks and trains at key stations between Omaha and Grand Island. Truck Run No. 153, westbound, leaves well ahead of Trains Nos. 3 and 15, picking up mail and express at all station stops, dropping off its loads at Fremont, Columbus and Grand Island well in advance of the arrival of these trains, which take them on for the West. The truck then lays over in Grand Island for about 5½ hr. until Nos. 4 and 16 have arrived from the west and departed, after which—as Truck Run No. 154—it "peddles" their head-end traffic to all stations, replenishing its load at key stations—Columbus and Fremont.

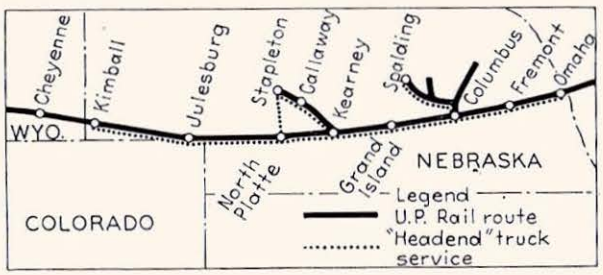
Most stations on the route continue to be served as well by trains other than Nos. 3, 4, 15 and 16, so that the combination of truck and train calls gives them frequent mail service.

The U. P. has been able to double the frequency of mail collection and delivery and to speed up some mail by 24 hr. by providing coordinated mail service —as well as handling express and cream—on leased trucks which perform local l.c.l. work on the 102-mi. branch from the main line at Kearney, Neb., to Stapleton. Until this service was inaugurated there was no early-morning connection westbound with main-line trains from the east and there was considerable dissatisfaction. Now businessmen get their mail and market news a day earlier, and the railroad was able to put its mixed train on a tri-weekly basis.

Table I—How Mail Trucks Tie In With Trains

Truck No.153	Train No.15	Train No.3	Mi.	Key Stations	Train No.4	Train No.16	Truck No.154
4:30p.m.	8:00p.m.	11:00p.m.	0.0	Omaha	**6:30a.m.**	**7:20a.m.**	**8:50a.m.**
3:15p.m.	8:55p.m.	11:47p.m.	37.2	Fremont	5:32a.m.	6:22a.m.	7:35a.m.
8:00p.m.	9:50p.m.	12:38a.m.	88.0	Columbus	4:37a.m.	5:28a.m.	6:05a.m.
9:55p.m.	11:10p.m.	1:55a.m.	153.6	Grand Is.	**3:10a.m.**	**4:00a.m.**	4:05a.m.

(All times shown are departures, except where arrival is indicated by boldfaced type.)



Coordinated highway service for head-end traffic augments passenger train service on a total of 660 route miles

On the Kearney Branch

The branch's truck work is handled by two runs. Truck Run No. 29 leaves Kearney freight station at 6:40 a.m., and passenger station at 7:00 a.m., making all stops to Callaway, 68.9 mi., where it arrives at 10:00 a.m. At Callaway it leaves its trailer with westbound consignments and picks up one with eastbound consignments brought in from further up the branch by the complementary truck run. Departing from Callaway at 10:45 a.m., it runs as No. 30 back to Kearney, arriving at 1:50 p.m.

The complementary truck works the west end of the branch direct from the main line at North Platte, cross country, giving towns on the west end the benefit of early-morning deliveries. Run No. 34 leaves North Platte freight station at 6:30 a.m. and passenger station at 6:45 a.m., arriving in Callaway at 10:20 a.m., a run of 84 highway miles. Here it leaves its trailer for No. 30 to take on east and picks up No. 29's for the west. Leaving Callaway at 11:20 a.m. as No. 33, it arrives North Platte at 2:50 p.m.

Mail is handled also by a way freight substitution truck operating on the branch line between Columbus and Spalding, a distance of 65 rail miles.

The U. P. is studying the possibilities of extending this type of head-end truck service to other areas—particularly the Pacific Northwest—in the belief that it speeds up passenger service, saves money through eliminating train stops and overtime, and is a boon for the Post Office and Railway Express Agency.

GENERAL NEWS

RRs Begin Testimony In Diesel Fireman Case

Budd, Symes, Brown, Jeffords and Horning oppose B. L. F. & E.

After receiving for nearly five consecutive weeks evidence from representatives of the Brotherhood of Locomotive Firemen and Enginemen in support of its demand for a second fireman on certain types of Diesel-electric locomotives, the Presidential "fact-finding" board which is hearing the case began on July 29 to take opposition testimony from a long succession of railroad witnesses. Ralph Budd, president of the Chicago, Burlington & Quincy, was the first, and had been followed, up to the time this issue of *Railway Age* went to press, by J. M. Symes, vice-president operations of the Pennsylvania; R. W. Brown, president of the Reading; L. S. Jeffords, vice-president and general manager of the Atlantic Coast Line, and L. W. Horning, vice-president, personnel and public relations, of the New York Central.

The board, which is composed of George W. Taylor, of Philadelphia, Pa., former chairman of the National War Labor Board, as chairman, Grady Lewis, Washington, D. C., attorney, and George E. Osborne, professor of law at Leland Stanford University, is the same one which earlier this year turned down a demand of the Brotherhood of Locomotive Engineers for an additional engineman on Diesel-electric road locomotives. (See *Railway Age* of April 16, page 60.) It has been in session on the fireman's case at New York since June 27; testimony presented to it by brotherhood witnesses has been reported in previous issues of *Railway Age*, beginning with that of July 2, page 45.

Mr. Budd, whose railroad was one of the pioneers in the development and use of Diesel locomotives, emphasized the fact that curtailing the use of such locomotives through "make-work" schemes will "seriously impede the railroads' efforts to furnish the best and cheapest mass transportation."

Competition Requires Low-Cost Operation

"In order to meet the increasing competition of other forms of transportation," Mr. Budd said, "the railroads must endeavor in every possible way to reduce the cost of producing transportation. The soundest basis for meeting this competition successfully is low cost operation, so that the largest volume of transportation will be used and the railroad plant which has been developed for the production of mass transportation may function as it was designed to do. . . . The Diesel-electric affords one of the most immediate and promising means of carrying out the Interstate Commerce Commission's appeal for greater efficiency in railroad operations."

Mr. Budd told the board that "unless the railway plant is continually improved both as to rolling stock and fixed property—the relative position of the railways in the overall transportation picture will retrogress. Arterial highways are being built to very high standards of construction and design. These improvements will enable our competitors to make their service more efficient.

"It is not my thought or wish that the railroads should have the cost of improving their plants paid for by the government or that they be subsidized as is being done for other types of transport, but there is, nevertheless, a cost which must be paid in order that the railroads may be able to keep up with the progress which their competitors are making largely at public expense.

"In the case of the railroads, the shipper rather than the taxpayer must pay the freight. Rates and fares alone sustain the railroads. However, such rates and fares must be on a competitive basis.

"Whatever causes loss of traffic or prevents the most efficient operation, or unnecessarily increases the cost of railway operation—as the demands of the firemen will do—is contrary to the interests of the employees, the public, and the railroads."

The original "Zephyrs," Mr. Budd said, were operated by only one man in the cab, and during the first year and a half of operation had accounted for 655,286 mi. without a single passenger or employee being injured in any manner and with practically no engine failures, before the firemen's organization forced the Burlington, under threat of a strike, to employ a fireman-helper. A study of the Burlington's Diesel passenger-train operation during a recent 12-month period showed that out of 38,998 engine crew trips on multiple-unit Diesel trains, 99.8 per cent of the trips were made without a delay due to engine room disabilities, he added.

"If additional firemen had been employed . . . they would have waited 434 days for a delay due to an engine-room disability which they might or might not have been able to correct. They would have waited 17,527 days for an engine-room disability of sufficient importance to necessitate the use of another locomotive. The wages of these extra firemen would have exceeded $600,000."

Unneeded Jobs Threaten Rail Survival

Mr. Symes warned that continually increasing wage outlays for non-productive work threaten the survival of the railroad industry.

After describing, and citing examples of, the growth of non-productive wage payments, he told the board that "many things had been advocated and many things obtained by railroad labor under the guise of safety measures," and charged that the railroad unions "have resorted to technicalities in the wording of working rules to obtain interpretations that were contrary to practices in effect for many years and thus lessen the work of certain workers at the expense of the jobs of others and decreased production.

"As we add highly paid unnecessary jobs," Mr. Symes said, "we must of necessity lay off the lower paid necessary maintenance workers, so that we not only have less productivity but less overall employment. It just does not add up to any sense at all. What is contended for in the Diesel case is just another one of these demands, and some day, some time, some where, a halt must be called on these make-work demands if the industry is to survive.

"I have been rather optimistic as to the future of the railroads even during these trying times of the past few years," Mr. Symes added, "but as I see costs mounting against a sharp decline in traffic volume, and knowing full well that the industry generally is accumulating deferred maintenance and not modernizing its plant and equipment as fast as it

H. C. Murphy, "Q" Vice-Pres., Will Succeed Budd as President

Harry C. Murphy, vice-president—operation since 1945 of the Burlington Lines, at Chicago, has been elected president of the Chicago, Burlington & Quincy to succeed Ralph Budd upon the latter's retirement on August 31. Mr. Murphy, 57, is slated to be elected also head of the other roads comprising the Burlington Lines (Colorado & Southern, Fort Worth & Denver City and Wichita Valley). As noted in the *Railway Age* of March 5, page 62, Mr. Budd will retire at age 70 after heading the Burlington for 17 years and serving continuously as a railroad president since 1919. The careers of both men will be described in a future issue of *Railway Age*.

should in order to reduce costs and improve service, I must confess that my optimism does not seem to be justified....

"Having accomplished all of the economies possible, there is only one thing left—to raise rates, in the hope of making the traffic profitable, but at the risk of driving it off the railroad." Railroad labor, Mr. Symes declared, "is already getting more than its share of the increased productivity of the Diesel-electric locomotives through wage increases, more favorable working conditions, rule changes, vacations, less effort and less hours of work."

Extra Men "Cause Confusion"

Mr. Brown also developed the point that employment of a second fireman would force the railroads to lay off other needed workers in lower wage brackets. "If the railroads are required to pay wages to unnecessary employees," he said, "they will be forced to curtail elsewhere—to lay off shopmen and section men who are engaged in essential and productive work."

Unnecessary men on locomotives, he also said, "causes confusion and divided responsibility and thereby increases the risk of accidents and results in general inefficiency." Reading Diesels he added, had operated 3¾ million miles during the last 3½ years with only 16 accidents that were in any way related to the operation of the Diesel. There were no fatalities and only three injuries to enginemen in these accidents, none of which could have been prevented by the employment of an additional fireman.

Challenging the union's contention that an extra fireman would increase the efficiency of operation, the witness testified that "a study on the Reading of all delays experienced by road Diesels during the past 42 months has failed to disclose a single instance where the presence of an additional fireman on the locomotive would have prevented delays. . . . The payment of wages to an extra Diesel fireman, or to any other employee who is not needed, is a wasteful expenditure and makes no contribution whatever to honest, economical and efficient operations."

"Railroads are unfortunate," Mr. Brown declared, "in that they cannot operate like other industries. During periods of declining business they cannot shut down their plant and cut off the great bulk of their operating costs. Railroads must be maintained and trains operated every day for such traffic as is available, regardless of whether the volume is large or small. If the railroads should be required to hire unnecessary personnel . . . railroad management will be forced to curtail other services. Betterments such as new rails, ties, ballast, equipment and the like, also would have to be further curtailed or deferred."

Trucks Reap Harvest of "Featherbedding"

Railroad labor is pricing itself out of jobs and crowding the industry to the brink of insolvency, while the trucking industry is reaping the harvest, Mr. Jeffords told the board.

"It just hasn't been possible," he said, "for the railroads to increase their efficiency fast enough to keep pace with the higher costs imposed upon them by the unreasonable demands of their employees. The part of the cost that couldn't be absorbed has had to be added to railroad rates. As a result, trucks have made serious inroads into almost every sort of rail traffic during the past year—at the expense of a lot of railroad jobs. No one but the trucking industry is profiting by the constant and unjustifiable demands of the leaders of the railway labor organizations.

"Unless the railroads are relieved from non-productive wages, 'make-work' schemes and 'featherbedding' practices, bankruptcy is inevitable and the railroads will become a burden upon the already over-taxed public."

Mr. Jeffords stated that assignment of a second fireman on "fireless" Diesel locomotives would cost the A. C. L. $1,175,000 a year, adding that "the efficiency would not be improved by having more people on the engine. It certainly would tax the understanding of the general public and disgust our shippers. . . . A study of the performance of the Coast Line's Diesel engines handling through passenger trains during a recent 12-month period disclosed that the extra man would have to patrol the engine room for seven months on an average before encountering an engine disability. Even then it is very doubtful that he could do anything about it."

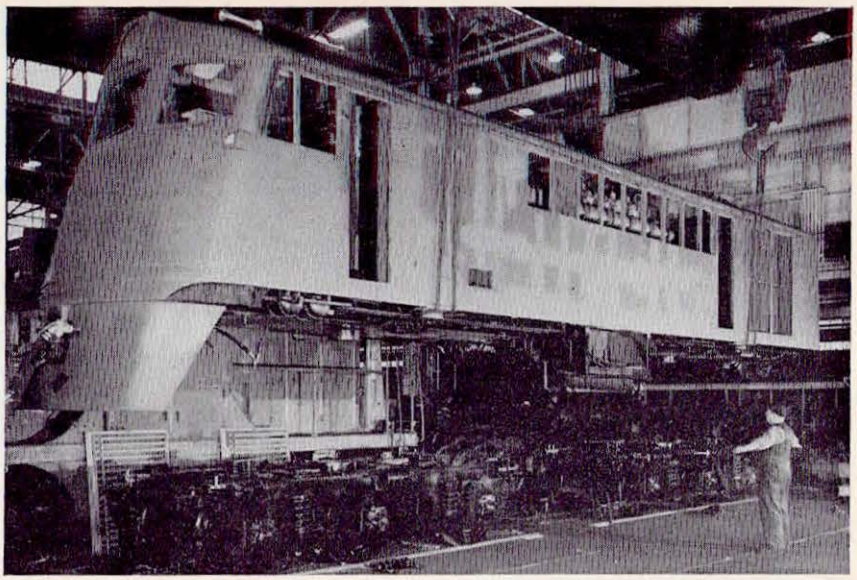
Mr. Jeffords said the fireman on a Diesel has one of the "softest" jobs on American railroads. "To divide up what little work he now has would do nothing but create two still softer jobs. It would bring both the railroads and their employees into disrepute. Our shippers and the general public would look upon it—and rightly so—as the ultimate in 'featherbedding.'"

He also cited some examples as "typical of the vast majority of Diesel firemen in through passenger service; Fireman Godfrey, running between Florence, N. C., and Savannnah, Ga., 200 mi., made 11 round trips in 11 days during November, 1948, and earned $505.46. He was on duty 90 hr. and 55 min. and his average compensation for each hour on duty was $5.56. The other 19 days he enjoyed at home." Mileage limitations imposed by the unions "already spread the fireman jobs among more workers than are needed."

Erosion of Managerial Functions

Railroad labor unions, Mr. Horning testified, are responsible for a continuous erosion of managerial functions that is leaving the railroads with undiminished responsibility for safe, efficient and economical transportation, but without adequate authority. "The unions," he said, "are held to no accountability for the results of their relentless prosecution of unending demands. Full responsibility remains with private management for whose experience and knowledge the unions have substituted their own ambitions. Railroad management must be given a freer hand to exercise its initiative, ingenuity and judgment."

Challenging the need of an additional fireman on Diesel locomotives, Mr. Hor-



A streamlined cab for one of Argentina's new Diesel-electric locomotives is lowered onto trucks at the General Electric Company plant in Erie, Pa. This is one of 70 units being built to form 35 double-unit locomotives for the General Belgrano (formerly Argentina State) Railway. The locomotive, consisting of two cabs, will be rated at 1,825 metric hp. Eight axle-mounted driving motors will furnish power for traction. Twelve axles in all will support the 330,000-lb. locomotive—224,800 lb. on drivers

ning said there was far less work for one fireman on a Diesel than on a steam locomotive. Firemen on Diesel locomotives, he added, spend far more time in their seats observing signals and the right-of-way than firemen on steam locomotives because tending fires and other duties on steam locomotives necessitate the firemen leaving their seats frequently.

In a six-month test in which Diesel and steam power were used interchangeably, the ratio of mechanical failures was 1 to 16 in favor of the Diesel-electrics, Mr. Horning said. "There were only three mechanical failures on the Diesels in more than one million miles of operation. None of these could have been prevented, nor could they have been corrected, by anyone in the engine room."

"Every conceivable mechanical safeguard has been placed on the Diesel-electrics to avoid the possibility of an accident to the men running them, to the public or to the equipment itself.... If the employee organizations were as sincerely interested in safe, efficient and economical operation as some of their representatives have professed, there would be no dispute over the need of extra firemen on locomotives which have no fires to tend."

6 Months' Net Income Totaled $173,000,000

Net railway operating income was $312,690,728

Class I railroads in the first six months of this year had an estimated net income, after interest and rentals, of $173,000,000, as compared with $262,000,000 in the corresponding period of 1948, according to the Bureau of Railway Economics of the Association of American Railroads. The six-months' net railway operating income, before interest and rentals, was $312,690,728, as compared with $410,932,720 in the same period in 1948.

Estimated results for June showed a net income of $43,400,000, as compared with $94,000,000 for June, 1948, while the net railway operating income for the 1949 month was $61,263,279, as compared with $124,972,863 for June, 1948. In the 12 months ended with June, the rate of return averaged 3.83 per cent, as compared with 3.57 per cent for the 12 months ended with June, 1948. Gross in the six months amounted to $4,369,260,739 compared with $4,606,719,256 in the same period of 1948, or a decrease of 5.2 per cent. Operating expenses amounted to $3,555,279,733 compared with $3,648,917,092, a decrease of 2.6 per cent

Thirty-one Class I roads failed to earn interest and rentals in the six months of 1949, of which 12 were in the Eastern district, 5 in the Southern region, and 14 in the Western district.

Eastern District

Class I roads in the Eastern district in June had an estimated net income of $10,000,000 compared with $39,000,000 in June, 1948. In the six months, their estimated net income was $76,000,000 compared with a net income of $91,000,000 in the same period of 1948.

Their net railway operating income in June amounted to $21,752,534 compared with $62,772,768 in June, 1948. Those same roads in the six months had a net railway operating income of $156,615,542 compared with $172,505,583 in the same period of 1948.

Gross in the Eastern district in the six months totaled $2,014,545,147, a decrease of 4.8 per cent compared with the same period of 1948, while operating expenses totaled $1,634,444,490, a decrease of 4.3 per cent below 1948.

In the South

Class I roads in the Southern region in June had an estimated net income of $3,400,000 compared with $11,000,000 in June, 1948. In the six months, their estimated net income was $32,000,000 compared with a net income of $47,000,000 in the same period of 1948.

Those same roads in June had a net railway operating income amounting to $6,128,921 compared with $13,845,147 in June, 1948. Their net railway operating income in the six months amounted to $54,008,383 compared with $69,828,951 in the same period of 1948.

Gross in the Southern region in the six months totaled $613,134,785, a decrease of 7.1 per cent compared with the same period of 1948, while operating expenses totaled $490,870,295, a decrease of 3.9 per cent below 1948.

Western Results

Class I roads in the Western district in June had an estimated net income of $30,000,000 compared with $44,000,000 in June, 1948. Their estimated net income in the six months was $65,000,000 compared with $124,000,000 in the same period of 1948.

Their net railway operating income in June amounted to $33,381,824 compared with $48,354,948 in June, 1948. Those same roads in the six months had a net railway operating income of $102,066,803 compared with $168,598,186 in the same period of 1948.

Gross in the Western district in the six months totaled $1,741,580,807, a decrease of 4.9 per cent compared with the same period of 1948, while operating expenses totaled $1,429,964,948, a decrease of less than 1/10 of one per cent below 1948.

Class I Railroads—United States

Month of June	1949	1948
Total oper. revenues	$735,439,108	$838,105,949
Total oper. expenses	588,177,393	626,089,812
Operating ratio—per cent	79.98	74.70
Taxes	72,407,446	72,687,139
Net ry. oper. income (Earns. bef. charges)	61,263,279	124,972,863
Net inc. after chgs. (estimated)	43,400,000	94,000,000
Six Months Ended June 30, 1949		
Total oper. revenues	$4,369,260,739	$4,606,719,256
Total oper. expenses	3,555,279,733	3,648,917,092
Oper. ratio—per cent	81.37	79.21
Taxes	421,165,073	461,202,053
Net railway oper. income (Earns. bef. charges)	312,690,728	410,932,720
Net inc. after charges (estimated)	173,000,000	262,000,000

B.&O. May Keep Competitive Louisville-St. Louis Fares

Division 2 of the Interstate Commerce Commission has authorized the Baltimore & Ohio to continue its competitive fares between Louisville, Ky., and East St. Louis, Ill., and St. Louis, Mo., without observing the long-and-short-haul clause of the Interstate Commerce Act's fourth section. The relief permits the B. & O., which has its f res on the eastern basis, to meet on this route the competition of the Louisville & Nashville and Southern which maintain basic fares on the lower Southern-territory level. The proceeding out of which Division 2's report came was docketed as Fourth Section Application No. 23859, and the relief granted is the same as that which the B. & O. has had on a temporary basis pursuant to the commission's Fourth Section Order No. 15756.

Three Rail Presidents on U. S. Chamber Transport Committee

Three railroad presidents are among 34 members of the Transportation and Communications Department Committee of the Chamber of Commerce of the United States. They are C. McD. Davis, president of the Atlantic Coast Line, who is also one of the two transportation members of the chamber's board of directors; R. B. White, president of the Baltimore & Ohio, and L. C. Sprague, president of the Minneapolis & St. Louis.

Appointments to the committee were announced recently by the chamber's president, Herman W. Steinkraus, who also said that Evans A. Nash, president of the Yellow Transit Company, Oklahoma City, Okla., would continue as the committee's chairman. Mr. Nash is the other transportation member of the

T. & P. Mounts "Soap Box for Freedom"

The Texas & Pacific has inaugurated a series of 12 newspaper advertisements designed to "combat the ever-increasing trend toward government interference into the lives of individual citizens of this nation." A coupon published with each advertisement entitles the sender to a copy of the booklet "Freedom Needs a Soap Box, Too." The first two advertisements of the series—being published in 125 on-line dailies and weeklies and 13 key off-line newspapers—drew more than 2,000 requests for the booklet from all 48 states, Canada, Mexico and Hawaii.

chamber's board. Other members of the committee include A. L. Hammell, president of the Railway Express Agency, and M. Forgash, president of the Universal Carloading & Distributing Co.

Also included are representatives of other forms of transportation, shippers, and the "general public." Harold F. Hammond, manager of the chamber's Transportation and Communications Department, is secretary of the committee. The group's first meeting will be held in Washington, D. C., on September 22.

Wrong King Crowned

In its July 9 issue, *Railway Age* erred in identifying one of the gentlemen in the picture at the bottom of page 120. The man at the extreme right, identified as S. C. King, general storekeeper, Florida East Coast, was in reality J. U. King, assistant general purchasing agent, Atlantic Coast Line. Our apologies to the Messrs. King.

Motor Rate Increases

Division 2 of the Interstate Commerce Commission has authorized New England motor carriers to make a general increase of 5 per cent in their rates between points in that territory and between such points and the New York City area. The authorization will not change present rates in Vermont and New Hampshire, where a 5 per cent increase on a temporary basis had previously been authorized; but it will convert that temporary boost into a permanent advance. The truckers had sought a 15 per cent increase.

The proceeding was No. MC-C-1025, and the division's decision was in line with the one wherein it recently authorized truckers in the Middle Atlantic states to make a like increase. The Middle Atlantic case was I. & S. No. M-2949, and the increase it authorized became effective July 20.

Commerce Department Willing To Take Transport Functions

The Department of Commerce has formally endorsed those recommendations of the so-called Hoover Commission which call for a grouping in that department of all major transportation activities of the federal government, except the regulatory functions of the independent commissions. The endorsement was embodied in a report submitted by the department to Senator McClellan, Democrat of Arkansas, who was a member of the Hoover Commission.

Under the recommendations involved, the Interstate Commerce Commission's functions relating to railroad consolidations, car service, and safety would be among those transferred, as would other I.C.C. functions which relate to the safety of motor carrier operations. The Hoover group's recommendations contemplated further that the Department of Commerce should also get what was at the time the Public Roads Administration (a unit of the former Federal Works Agency). All function of F.W.A., including those of P.R.A., have since been transferred to the General Services Administration, which was set up under recently-enacted legislation, but Congress nevertheless still has before it a proposal by President Truman to carry out the Hoover Commission recommendation by placing P.R.A. in the Commerce Department (see *Railway Age* of July 9, page 139).

With respect to civil aviation, the Hoover Commission recommended that there be established in the Commerce Department a Bureau of Civil Aviation to take over the functions of the Civil Aeronautics Administration and also have responsibility for promulgating air safety rules. Its recommendations with respect to the merchant marine called for placing the Maritime Commission's "business functions" within the Commerce Department. The department's report to Senator McClellan included the following general comment on the Hoover-Commission recommendations:

"Adoption of the general program advanced by the commission would result in a far greater degree of unity both in policy formulation and in the administration of transportation functions than exists at the present time. . . . In the absence of any proposal for a separate department of transportation we are . . . inclined to believe that the Department of Commerce probably represents the most appropriate agency for the location of these functions . . ."

Would Make Trucking of Farm Products Freer from Regulation

For-hire trucking of agricultural products, livestock and fish will be much freer from full regulation than it is under presently-effective determinations of the Interstate Commerce Commission and its Bureau of Motor Carriers, if the commission should adopt the recommended findings of a proposed report by Examiner C. Evans Brooks. The proposed report was made in the No. MC-C-968 proceeding, an investigation instituted by the commission in June, 1948, to determine the meaning of the Interstate Commerce Act's section 203(b)(6).

Insofar as it is pertinent to the present case, that section provides that "motor vehicles used in carrying property consisting of ordinary livestock, fish (including shell fish), or agricultural commodities (not including manufactured products thereof), if such motor vehicles are not used in carrying any other property, or passengers for compensation," shall be exempt from regulation except that relating to qualifications and maximum hours of service of employees and safety of operation or standards of equipment. The commission instituted its investigation after it had received numerous petitions for reconsideration of the decision made by its Division 5 in the so-called Harwood case.

That case, reopened and given further hearing as part of the investigation, is No. MC-107669, *Norman E. Harwood Contract Carrier Application*, and Division 5's decision was reported in 47 M.C.C. 597. That decision found that the exemption provision did not apply to fresh cut-up vegetables in cellophane bags and fresh vegetables, washed, cleaned, and packaged in cellophane bags or boxes. In making this determination, the division relied on the so-called "channel of commerce" principle, which it had announced in an earlier case and which stipulates that the exemption ends when the agricultural commodities involved "first enter the ordinary channels of commerce."

As the examiner put it, the agricultural interests "vigorously assail" the finding in the Harwood case. They contend that "such a restricted interpretation is clearly contrary to the intent of Congress," he added. He identified the "principal issue" as a determination of the meaning of the words "agricultural commodities (not including manufactured products thereof)." Witnesses who offered evidence included 11 "scientists" of the United States Department of Agriculture, college professors, officials or agencies of nine states and representatives of various interested parties, including the railroads. The position of the latter, as summarized in the proposed report, was that "the Harwood case principle is not only proper but is the only practical approach for determining the applicability or non-applicability of the partial exemption in question."

As indicated at the outset, the examiner's recommended findings would involve a substantial liberalization of the Harwood case principle and other presently-effective determinations. Generally, he was convinced by the evidence and his review of the act's legislative history that agricultural products can be subjected to much processing before they become "manufactured products" of agriculture and thus lose the exemption.

His recommended finding was that the term "agricultural commodities (not including manufactured products thereof)," as used in section 203(b)(6), includes:

1. Fruits, berries, and vegetables which remain in their natural state (but not frozen or quick frozen), including vegetables shredded or chopped-up and mixed, and irrespective of the processing performed in preparing the commodities for any market or the manner in which packed, so long as they are not placed in hermetically sealed containers.
2. Vegetables dried naturally and fruits and berries dried naturally or artificially, but not placed in hermetically sealed containers.
3. Seeds, including those ready for planting or packaged for consumer use (except mustard seed or other seeds prepared for condiment use).
4. Any forage, loose or baled hay, chopped hay and dehydrated chopped hay.
5. Tobacco leaf, redried tobacco leaf, hops and castor beans.
6. Raw peanuts, shelled or unshelled, and other nuts, shelled or unshelled, to which nothing has been added.
7. Whole wheat, rye, and oats, including those dehulled, barley (including pearled), flax, corn, sorghums, and rice; shelled corn, and sorghum fodder, and stover.
8. Cotton lint and linters, cottonseed, cottonseed hulls, ramie fiber, flax fiber, flaxseed, and hemp fiber.

9. Chickens, turkeys, ducks, geese, aand squab, alive or killed, picked, drawn, cut-up, frozen, or unfrozen.
10. Milk, cream, and skim milk; standardized milk; milk, cream, and skim milk which has been pasteurized or frozen; homogenized milk and cream; and vitamin "D" milk and skim milk.
11. Pelts, skins, green and salted hides, wool and mohair (including that cleaned or scoured).
12. Eggs, including whole eggs and oiled eggs, but excluding frozen or dried eggs and frozen or dried egg yolks and albumin.
13. Feathers, hackles, down (from ducks and geese), and quills.
14. Manure.
15. Logs, pulpwood, crude resin, maple sap, bark, leaves, Christmas trees and greenery, coated or uncoated, and Spanish moss.
16. Nursery stock, cut flowers, and bulbs.

The extent of the proposed liberalization is indicated by examples of commodities which Division 5 has held to be manufactured products and thus not exempt. Such commodities include the cut-up and packaged vegetables involved in the Harwood case, pasteurized milk, shelled peanuts, poultry (killed and picked), and redried leaf tobacco. Rulings of the Bureau of Motor Carriers have listed as non-exempt commodities cottonseed hulls, dried fruits, vitamin "D" milk, and feathers. The bureau has also held that such commodities as hides, logs, resin, flowers and bulbs, shrubs and other nursery stock, seeds, and Christmas trees are not agricultural commodities and hence not exempt.

As to Harwood, he took no interest in the proceeding, not even in that phase of it which involved further hearing on his own application. Since the commodities covered by that application would be exempt under the examiner's recommended findings, the proposed report said that the Harwood application should be dismissed because no permit or certificate would be required for the transportation service proposed by the applicant.

Intrastate Rate Cases

The Interstate Commerce Commission has found that unjust discrimination against interstate commerce results from the Alabama Public Service Commission's refusal to permit railroads serving that state to apply the Ex Parte 162 increases to their intrastate freight rates. The increases involved are those which the I.C.C. approved for interstate application in its report of December 5, 1946, since which time there have been the Ex Parte 166 increases and the interim increase in the pending Ex Parte 168 case.

The commission's report was in the No. 29845 proceeding, and it said that an order requiring the railroads to make the intrastate increases would be issued unless the Alabama commission advised within 30 days from the date of service of the report (which was dated July 11) that it would "promptly" permit the adjustment.

Meanwhile, the commission vacated a February 28 order in No. 30015, which would have required railroads serving Alabama to bring their intrastate fares into line with the interstate level. The vacating order said that the Alabama commission had authorized establishment of the fare increases involved.

Reporting on reconsideration in No. 30024, which involves the application of the Ex Parte 166 increases to intrastate freight rates within Texas, the commission has modified its prior report to eliminate the Texas intrastate rates on pulpwood from those found discriminatory against interstate commerce. The railroads "admit error in their showing of the Texas intrastate rates," the report on reconsideration said. It added that comparisons indicate that the interstate rates on pulpwood from points in Texas to points in Louisiana "are generally lower for corresponding distances" than the present Texas intrastate rates.

"Town Meetings on Wheels" Begun by C. & N. W.

A special training car of the Chicago & North Western has begun a 62-day summer tour of key cities on a 10,000-mi. system, and will serve as a meeting place for all classes of employees who wish to meet voluntarily to discuss technical and public relations problems with which they are confronted. The air-conditioned classroom car is equipped with sound motion picture projectors, slide projectors and public address system. It may be used as an auditorium seating 30 persons, or tables can be set up for use as desks.

C. C. Houston, chief employment officer, and C. M. Mattson, supervisor of passenger sales training, are in charge of the project and will augment discussions with motion pictures and illustrated talks. "The program is designed to give employees an opportunity to find out the 'know-why' as well as the 'know-how' which they already have," said Mr. Houston. "Through open discussion of the problems met by our men in the various branches of service, we hope to achieve a more complete knowledge and perspective of our functions in relation to each other and to the public as a whole."

Operating Officers Get Suggestions on L.C.L.

J. H. Aydelott, vice-president of the Association of American Railroads in charge of the Operations and Maintenance Department, recently sent to chief operating officers of A.A.R. member roads a number of suggestions for improving l.c.l. service. The suggestions were those of a committee which was appointed recently to analyze and review the matter.

This committee was the L.C.L. Subcommittee of the Operating-Transportation Division's General Committee; and it was appointed after the question of improving l.c.l. service was discussed at an October, 1948, meeting of the National Association of Shippers Advisory Boards in St. Louis, Mo. Among other recommendations of the subcommittee's report was one calling for the appointment of l.c.l. subcommittees of the Railroad Contact Committees in each Advisory-Board territory where such a subcommittee does not now exist.

Meanwhile, the subcommittee emphasized its view that much of the work required to improve l.c.l. service must be done by individual roads. In that connection it suggested that attention be given to the following matters: (1) Additional overhead cars to hold transfers to a minimum; (2) open routing of l.c.l. and sailing days or schedules via different routes on alternate days to permit assembling tonnage to go forward daily in overhead cars, and (3) interchange of l.c.l. by drayage instead of by trap car.

The subcommittee's analysis indicated that the "principal contributing causes of delay" to l.c.l. are: Terminal delay in placement; cars not placed in order of arrival; cars not dispatched on trains on which designated to move; delay in handling traffic moving between stations in interchange; cars held over not worked; shipments not forwarded on scheduled date of receipt from patrons; five-day acceptance of freight by patrons; delays in pick-up and delivery; over shipments not delivered promptly, and delay to cars stopped.

"The report of the L.C.L. Subcommittee," Mr. Aydelott said, "was approved by the General Committee and the recommendation concerning activities with the Shippers' Advisory Boards is being progressed at the present time with the chairmen of the Railroad Contact Committee of each Advisory Board. The recommendation relative to individual railroad participation is submitted with a view to bringing about further improvements in l.c.l. service."

I.C. Act Amended

President Truman on August 2 signed recently-enacted legislation which makes several "non-controversial" amendments to the Interstate Commerce Act, as recommended by the Interstate Commerce Commission in its recent annual reports. The legislation was embodied in S.256, a bill sponsored by Senator Reed, Republican of Kansas.

Among the amendments is one which gives the commission authority to require reports from, and inspect records of, carrier associations, such as the Association of American Railroads, American Short Line Railroad Association, American Trucking Associations, and Freight Forwarders Institute. The others will (1) give the commission authority to prescribe rules for extension of credit by express companies; (2) eliminate the requirement that a public hearing be held in all merger and acquisition cases where rail carriers are involved; (3) apply the act's consolidation and issuance-of-securities provisions to sleeping-car companies; (4) modify provisions relating to service of notice to ease the commission's work in that respect; (5) except from the consolidation provisions street or interurban railways not controlled by a carrier which is part of the "general steam

railroad system," and (6) provide a remedy by fortfeiture for failure of motor carriers, brokers, etc., to comply with commission orders and regulations under Part II of the act.

The President has also signed another recently-enacted bill—S.255. Senator Reed was also the sponsor of this legislation which amends Part II of the act to clarify the jurisdiction of joint boards in motor-carrier cases. It provides that, in cases where some members of such boards are not present, the members who are present may proceed with a hearing and make recommendations to the commission.

"Shasta Daylights" Attract 950 Riders Daily in First 3 Weeks

The Southern Pacific's two new "Shasta Daylight" streamliners, which were placed in daily service on July 10 between San Francisco, Cal., and Portland, Ore., transported their 20,000th passenger on July 31. Claude E. Peterson, vice-president in charge of passenger traffic, said that the new trains (described completely in the *Railway Age* of July 16, page 49) are developing considerable new travel to and from the Pacific Northwest, with no sign of letup in their popularity. Many of the 950 passengers who have ridden the trains daily during the first three weeks, he added, are doing so merely to enjoy the scenic trip at a new low Shasta Route fare.

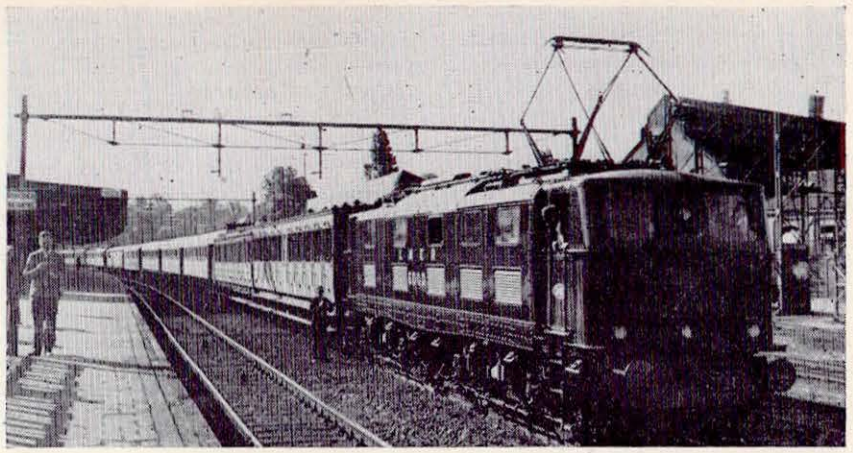
"In interviewing passengers on the trains, we have met a number who said they had no previous plans for going to San Francisco or Portland," said Mr. Peterson. "They decided to take the ride after going through the trains in preview showings."

Mid-West Shippers and Carriers Set Up L.C.L. Service Groups

Frank P. Zeidler, mayor of Milwaukee, Wis., on July 27 welcomed to his city the eighty-seventh regular meeting of the Mid-West Shippers Advisory Board, stressing in his talk the profound change which has taken place in shipping patterns and the need for cities and carriers to work together in the evelopment of improved low cost transportation facilities for industry.

The railroad contact committee announced formation of a seven-man subcommittee to analyze l.c.l. service, and, specifically, to study the need for additional overhead cars, by-passing busy transfer stations. The advisory board's executive committee authorized creation of a similar committee composed of shippers, to work with the contact committee toward elimination of obstacles to better l.c.l. transportation.

Irving M. Peters, traffic manager, Corn Products Refining Company, reported on the 1949 Perfect Shipping campaign. He pointed to a reduction in the number of claims filed in 1949, compared with 1948, of 19 per cent in January; 20 per cent in February; 24 per cent in March, and 28 per cent in April The dollar value of claims was down 1.9 per cent in January, 1949, compared with January, 1948; 4 per cent in Feb ruary; 13.6 per cent in March and 19.3 per cent in April. Figures for March and April are estimated.



London & North Eastern electric locomotive No. 600 at the head of a 405-ton passenger train

"V for Victory" Over Accidents on New Haven

The "V" sign of victory, popularized by Winston Churchill during World War II, has been adopted by the New York, New Haven & Hartford as a part of its continuous safety program. It will be a "V" for victory over accidents. If an employee observes another performing a task in an unsafe manner, or violating some safety rule, he will call out to him and at the same time raise and extend the first two fingers. Railroad officers believe this simple gesture will be effective in conveying a message that something is wrong, and that its widespread use will result in lowering the number of employee injuries.

Tax Relief, Higher Fares, Seen As Only "Out" for Long Island

Relief from virtually all property taxes, or substantial increases in passenger fares, are the only means of making the Long Island self-supporting under private ownership, according to a special report by the J. G. White Engineering Corporation, in which purchase of the road's passenger services by a state authority is also suggested.

The report was completed on October 15, 1948, "at the request and expense of the Pennsylvania . . . to determine whether to continue to subsidize the Long Island" but was not made public until August 1, in connection with the Long Island's pending application to the Public Service Commission of New York for a 16 2/3 per cent increase in non-commutation passenger fares. In a press statement accompanying release of the report, H. H. Pevler, Pennsylvania vice-president at New York, called it "only one among several factors serving to influence the Pennsylvania in deciding to discontinue its subsidies to the Long Island."

"The railroad's own judgment in that respect was confirmed by this report," he said, adding, however, that "other recommendations made by these independent engineers as to steps following discontinuance of subsidies were regarded as subject to further consideration by the Pennsylvania in the light of its own experience."

Among recommendations in the report, as summarized in Mr. Pevler's statement, were the following:

"The Pennsylvania should dispose of the entire Long Island Rail Road through receivership, recapturing from the receiver the exclusively freight portions of the road, with trackage rights for movement of freight over lines now used for both freight and passengers.

"State authority appears to be the only possible purchaser for the passenger portion, since only under public ownership could the road avoid payment of property taxes and obtain low interest rates, and thus become self-supporting. White engineers see no feasible means by which it can be made self-supporting without subsidies under present ownership.

"A depression will reduce total traffic and will divert a portion of the remaining traffic. . . . The road will continue to lose coal traffic. . . . Increase of tonnage in higher-rate commodities probably will offset this loss in the long-term trend. Intra-island freight traffic has declined rapidly in the past; it may be lost entirely to truck competition. This loss will have little or no effect on net operating income.

"The Long Island has embarked on a program of improvement of public relations which appears to be securing all the results that can be hoped for so far. White engineers . . . doubt whether any program could result in such excellent relations that the road could obtain

either relief from all property taxes or sufficient increases in passenger fares to place it on a self-supporting basis.

"In addition to existing commitments to expend nearly $27 million, other necessary modernizations and improvements to facilities will require further expenditures which may reach $56 million by the end of 1953, a total of $83 million."

The report's other recommendations dealt with details of receivership, finances and Pennsylvania-Long Island intercorporate relations.

Freight Car Loadings

Revenue car loadings for the week ended July 30 totaled 723,810 cars, the Association of American Railroads announced on August 4. This was an increase of 5,294 cars, or 0.7 per cent, above the previous week; a decrease of 170,565 cars, or 19.1 per cent, below the corresponding week last year, and a decrease of 197,781 cars, or 21.5 per cent, under the equivalent 1947 week.

Loadings of revenue freight for the week ended July 23 totaled 718,516 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, July 23

District	1949	1948	1947
Eastern	126,852	153,909	162,336
Allegheny	136,470	179,437	191,193
Pocahontas	45,457	75,542	71,209
Southern	100,683	130,678	131,405
Northwestern	133,083	137,137	146,311
Central Western	119,360	136,541	144,998
Southwestern	56,611	68,885	72,476
Total Western Districts	309,054	342,563	363,785
Total All Roads	718,516	882,129	919,928
Commodities:			
Grain and grain products	75,172	65,007	72,927
Livestock	8,353	9,424	12,414
Coal	104,573	187,706	177,907
Coke	8,575	14,497	14,008
Forest products	38,272	52,953	51,194
Ore	77,618	81,327	88,535
Merchandise l.c.l.	8,403	99,044	112,259
Miscellaneous	320,550	272,171	390,684
July 23	718,516	882,129	919,928
July 16	724,100	892,080	919,735
July 9	595,321	755,100	807,117
July 2	644,182	757,278	629,204
June 25	802,941	888,368	846,141
Cumulative total 29 weeks	20,773,917	23,356,819	24,258,153

In Canada.—Carloadings for the week ended July 23 totaled 74,526 cars, as compared with 73,210 cars for the previous week, and 78,433 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
July 23, 1949	74,526	30,000
July 24, 1948	78,433	31,402
Cumulative totals for Canada:		
July 23, 1949	2,096,379	902,499
July 24, 1948	2,167,025	1,007,057

Upholds Train Discontinuance

Stoppage of service by the Chicago & Eastern Illinois last April 21 of its "Cardinal" between Chicago and St. Louis, Mo., has been upheld by the state circuit court of appeals at Tuscola, Ill. Several Illinois communities had appealed the Illinois Commerce Commission order which permitted the road to discontinue the train, and it was indicated that the case will be carried to the state supreme court. The train was said by the railroad to be losing $300,000 yearly (see *Railway Age* of April 30, page 57).

Rio Grande Asks I.C.C. to Make U.P. Open Ogden Gateway

The Denver & Rio Grande Western has filed with the Interstate Commerce Commission a complaint whereby it seeks to have the commission force open the Ogden, Utah, gateway by requiring the Union Pacific to participate in joint through rates via that gateway on traffic between so-called Colorado common points or points east thereof, and points in Idaho, Montana, Oregon, Washington, and British Columbia. Filing of the complaint drew from U.P. President A. E. Stoddard a statement announcing that his road will "vigorously oppose" the proposal, which he characterized as "an attempt by the D.&R.G.W. to invade a large territory built up and served by the Union Pacific through the years by investment of millions of dollars in providing equipment, facilities and service."

Meanwhile, a Rio Grande announcement had included a statement by its president, Wilson McCarthy, who said that his road's "sole purpose" is to "permit fullest possible utilization of all railroad facilities for all shippers." Mr. McCarthy added that "choice of routes should be a matter for the shipper to decide; it is not in the public interest to allow a single railroad to use the club of discriminatory freight rates to force traffic over its lines." All railroads which are parties to tariffs covering movements of the traffic involved are named defendants along with the U.P., but the D.&R.G.W. announcement explained that the complaint "centers on" the U.P.'s "refusal" to establish "competitive joint through rates with the Rio Grande by way of Ogden." The announcement went on to say that through rates between Colorado common points and points on or via the U.P. beyond Ogden, now apply only on traffic which is delivered to the U.P. at Denver; and, in the case of shipments originating in the East, through rates apply only if such shipments are delivered to the U.P. at Missouri river crossings.

The complaint said that the Ogden gateway was opened in 1897; and, though partially closed by tariff cancellations in 1906, it remained open to some through traffic until December, 1912. It also said that the Rio Grande-U.P. route through Ogden was used "to a substantial extent" during World War II and during the "blockades and congestions" which resulted from last winter's snow storms. "It is," the complaint added, "strictly contrary to the National Transportation Policy for the defendants to restrict the use of such vital through routes to emergency situations, and they should be restrained from doing so."

U.P. President Stoddard insisted in his statement that inclusion of the Rio Grande in the routing of the traffic involved "would result in longer, slower and circuitous routing which entails expensive, unnecessary and wasteful transportation practices." In addition to "these disadvantages to shippers," he went on, "the proposal would not contribute in any way to the development or maintenance of the territory involved in the way of cars, facilities, taxes or payrolls.

Its real effect would be to take from the Union Pacific its recognized long-haul reward for expenses it has incurred in developing communities and providing service to the home territory."

Four Roads Cut Bulk Milk Rates to New York Area

Effective August 1, the New York Central, the Delaware & Hudson, the New York, Ontario & Western and the Rutland reduced by approximately 27 per cent rates on fluid or bulk milk moving into the New York area by tank car.

The new rates apply from points within the New York "milk shed" in the states of New York, Vermont, Connecticut, New Jersey, northern Pennsylvania and western Massachusetts, and cover a radius of about 400 mi. from New York City. They were designed to meet competition by trucks, which handle about 75 per cent of the milk coming into New York, against roughly 50 per cent before the war.

Similar reductions are understood to be under consideration by the Pennsylvania, the Erie and the Delaware, Lackawanna & Western, although action may be delayed pending the outcome of a protest filed by trucking interests with the New York Public Service Commission on the reduced intrastate rates within New York.

W. T. Faricy Named Chairman Of National Defense Group

William T. Faricy, president of the Association of American Railroads, has been appointed chairman of the Civilian Components Policy Board of the National Military Establishment. The appointment was announced on August 3 by Secretary of Defense Louis Johnson who explained that the new board "will coordinate all policy and programs of civilian components of the Armed Forces," being authorized "to study and evaluate all questions affecting the organized reserves of the Army, Navy (including Marines), Air Force and the National Guard, both ground and air." While serving in the new position Mr. Faricy will continue as president of the A.A.R.

Secretary Johnson's announcement said that Mr. Faricy, as the Board's "civilian chairman," will have as asso-

ciates a military executive officer and 18 other members, representing various branches of the Armed Forces, as follows: Army, one under secretary or assistant secretary; two National Guard officers; two reserve officers, and one regular Army officer; Navy, one under secretary or assistant secretary, two Naval Reserve officers (one from Naval Air), two Marine Reserve Officers (one from Marine Air), and one regular Navy officer; Air Force, one under secretary or assistant secretary, two Air National Guard officers, two reserve officers, and one regular Air Force officer. Mr. Faricy was a member of the Armed Forces during the first World War, having served in France as a lieutenant and captain of the 350th Infantry.

T.A.A. Expands Pacific Coast Organization

Ray B. Wiser, of Berkeley, Cal., president of the California Farm Bureau Federation, whose appointment as chairman of the Transportation Association of America's Northern California-Nevada regional forum was reported in the *Railway Age* of July 30, page 61, has now been appointed chairman of the association's Pacific Slope forum. This group will cover the states of California, Arizona and Nevada, and will take over the functions originally scheduled to be handled by two separate forums—one for northern California and Nevada and one for southern California and Arizona.

Mr. Wiser will maintain headquarters at both San Francisco, Cal., and Los Angeles, and will be assisted by four vice-chairmen—one each for Arizona and Nevada and two for California.

Membership in the forum includes R. S. Hirsch, freight traffic manager, Atchison, Topeka & Santa Fe, Coast Lines, at Los Angeles, and W. T. Price, traffic manager, Union Pacific, South-Central district, also at Los Angeles.

Shows Last Year's Air Mail Costs and Postal Deficits

Air lines received $41,236,971 for handling 6 per cent of the non-local, first-class mail in the fiscal year ended June 30, 1948, when the railroads received only $26,347,788 for handling the other 94 per cent. This and other like comparisons are made in a statement which Robert S. Henry, vice-president of the Association of American Railroads in charge of the Public Relations Department, has prepared from the Post Office Department's latest cost ascertainment report.

The $26,347,788 paid to the railroads included $21,949,458 "for the use of postoffices on wheels provided by the railroads for the sorting and distribution of mail en route," Colonel Henry explained, adding that there is "no comparable service of sorting in transit by air." The A.A.R. vice-president's further comment on the Post Office Department's figures included the following:

"The . . . cost ascertainment report shows that total revenues from non-local, first-class mail averaged $4.29 per ton-mile [in fiscal 1948], while expenditures were $3.33, leaving a surplus revenue over and above all costs of handling non-local, first-class mail, of 96 cents per ton-mile. Total revenues from domestic air mail averaged $2.36 per ton-mile, while the cost for handling was $3.55, creating a deficit of $1.19 per ton-mile. Included in the above costs are an average cost of 25 cents per ton-mile for transporting mail by train and an average cost of $1.82 per ton-mile for transporting it by air.

"The above calculations are based on the tons of mail handled one mile by surface and air carriers. It is interesting also to compare the revenues and expenditures per piece of mail. The average revenue . . . per piece of non-local, first-class mail in 1948 was 3.23371 cents. The average expense of handling was 2.50571 cents per piece. The rail transportation cost included in this expense was 0.18487 cents (less than one-fifth of a cent), for which the railroads carried each piece of mail an average distance of 506 miles.

"For the average piece of domestic air mail the Post Office Department received in 1948 revenue of 6.72824 cents. The expense of handling the average piece was 10.12777 cents. Included in this expense was 5.17761 cents paid to air lines, for which they carried the average piece of domestic air mail 1,401 miles. Transportation of mail by air, therefore, cost the Post Office per piece 28 times as much as surface transportation. Allowing for the difference in length of movement, the transportation cost of moving mail by air is more than 10 times the cost of moving it by rail."

Additional General News appears on page 75

ABANDONMENTS

Application has been filed with the Interstate Commerce Commission by:

Chicago & North Western.—To abandon its 71-mi. line between Wall Lake, Iowa, and Mondamin; its 5.4-mi. line between Hunting, Wis., and Big Falls; its 9.5-mi. line between Aniwa, Wis., and Mattoon; its 13.9-mi. line between Pratt Junction, Wis., and Paine's Spur, and its 9.2-mi. branch line from a switching connection with the main line to Gogebic, Mich. All lines involved total 109 mi. The C.&N.W. said that continued operation of these lines would impair its ability to furnish adequate transportation service upon its system as a whole. Such lines are not economically useful and the public convenience no longer requires their operation, the C.&N.W. contends.

Division 4 of the Interstate Commerce Commission has **authorized**:

Lehigh Valley.—To abandon its Moosehead branch, from Moosehead Junction, Pa., to the plant of the Luzerne Ochre Manufacturing Company, near Wright's Creek, 6,484 ft. The report said the branch has not been in use since that company closed its mines in 1945.

SUPPLY TRADE

Baldwin's Six-Month Sales and Net Higher Than in 1948

Consolidated sales of the Baldwin Locomotive Works and its wholly owned subsidiaries for the six months ended June 30, 1949, were $68,032,019, and net profit for the period amounted to $1,829,627, as compared with sales of $61,711,160 and net profit of $1,618,118 for the six months ended June 30, 1948. No dividends were received from the Midvale Company during the six months ended June 30, 1949, as compared with dividends of $383,425 received from Midvale during the six months ended June 30, 1948.

After provision for preferred stock dividends net profit for the first six months of 1949 was equivalent to 74 cents per share on the 2,375,553 shares of common stock outstanding as of June 30, 1949, as compared with 82 cents per share for the first six months of 1948 on the 1,875,553 shares of common stock outstanding as of June 30, 1948.

In releasing the foregoing figures, M. W. Smith, president of Baldwin, further reported that orders booked during the first half of 1949 amounted to $31,232,193 and that orders unfilled as of June 30 amounted to $68,010,049, as compared with orders booked during the first half of 1948 of $68,211,601, and orders unfilled as of June 30, 1948, of $122,571,569.

General Motors to Erect Diesel Locomotive Plant in Canada

The General Motors Corporation will begin construction immediately of a Diesel-electric locomotive plant at London, Ont., to have a capacity of one locomotive a day, C. E. Wilson, G. M. C. president, announced on July 29. The plant is to be erected on a 210-acre tract of land, contain 226,000 sq. ft. of floor space and employ approximately 1,000 persons. It will draw parts and materials from many Canadian sources, Mr. Wilson stated.

The plant operation and distribution of locomotives produced in Canada will be by a new subsidiary of General Motors to be known as General Motors Diesel, Ltd., which will work in close cooperation with the Electro-Motive Division at La Grange, Ill. The new facility will build locomotives for all classes of railroad service.

"The object of the move," said Mr.

Wilson, "is to make available to Canadian railways modern and efficient motive power of the same type that has proved advantageous to American railroads. There is every reason to believe that the production of Diesel locomotives in Canada will bring substantial benefits to Canadian railways. In the United States, the railroads are actively carrying out a program of extensive Dieselization, as indicated by the April, 1949, Interstate Commerce Commission power reports, which show Diesel locomotives supplying the motive power for 47.5 per cent of the yard switching hours, 31.5 per cent of the freight gross ton-miles, and 47.5 per cent of the passenger-train car-miles. By comparison, the use of Diesel power in Canada, with its great distances and weather extremes, will be even more beneficial.

"Another important advantage to the Canadian economy which will result from the use of Diesel power will be the use of the products of the great oil fields in the Province of Alberta, which we understand are sufficient to meet all Canadian requirements for Diesel fuel oil and other petroleum products."

Charles C. Davis, formerly sales representative for the **American Locomotive Company,** at St. Louis, Mo., has been appointed assistant to vice-president—Western regional sales, with headquarters at Chicago, and **Carl A. Gandy, Jr.,** formerly sales representative at Atlanta, Ga., has been transferred to St. Louis. Mr. Davis joined American Locomotive at the Auburn, N. Y., plant in 1940 and was transferred to Schenectady, N. Y., in 1941. With the exception of three years' service as a captain in the United States Army Transportation Corps, Mr. Davis worked as service engineer and sales representative at Schenectady until 1946, when he was transferred to St. Louis. As noted elsewhere in this issue, **William L. Lentz,** vice-president of the **American Locomotive Company,** at New York, has been appointed superintendent of equipment of the Delaware & Hudson, with headquarters at Albany, N. Y.

The finishes division of the **E. I. du Pont de Nemours & Company,** Wilmington, Del., has announced the appointment of **Theodore J. Mitchell** as industrial sales manager for the San Francisco, Cal., region.

Templeton, Kenly & Co., Chicago, maker of Simplex Jacks, has appointed **Mark C. Simpson** as Pennsylvania division sales manager, with headquarters at Roscoe, Pa.

Clarence T. Gilchrist, assistant general manager of sales, Chicago district, of the **American Steel & Wire Co. (United States Steel Corporation** subsidiary), has been appointed to the newly-established post of Western area sales manager, with headquarters at Chicago. **Roswell F. Curtis,** manager of the manufacturers' products sales division at Cleveland, **Ohio, and Howard B. Maquire,** sales manager at Detroit, Mich., have been appointed to the newly-created positions of sales managers in the Eastern and Central areas, respectively, with headquarters at New York and Cleveland.

The **Hyster Company,** Portland, Ore., has appointed **J. W. Morgan,** formerly district representative, as assistant sales manager of the eastern sales division, with headquarters at the firm's Peoria (Ill.) plant. He will be in charge of tractor equipment sales activities.

As part of its $15,876,000 modernization and expansion program, the **Colorado Fuel & Iron Corporation** is now constructing a 27-stand continuous rod mill at its Pueblo (Colo.) plant, at a cost of $5,200,000. The new mill is scheduled to begin operation prior to October 1.

R. C. Burgess has been appointed general traffic manager of the **Owens-Corning Fiberglas Corporation.** Mr. Burgess joined the corporation in 1942 and, after a tour of duty as service manager at

R. C. Burgess

the Newark, Ohio, plant and the Burlington, N. J., distribution center, he was assigned to the general offices at Toledo, Ohio, as assistant for production operations on the staff of B. E. Boyd, vice-president in charge of manufacturing.

Scully-Jones & Co., Chicago, has appointed **A. A. Gustafson,** 2580 University boulevard, St. Paul W4, Minn., as its factory representative in the state of Minnesota and the Wisconsin counties of Eau Claire and Chippewa.

D. W. Onan & Sons, Inc., Minneapolis, Minn., has appointed **John W. Thorp Company,** 50 Church street, New York, as Onan representatives for railway sales in New York and the New England area.

John R. Kingman, whose promotion to sales manager, Railway division, of the **National Malleable & Steel Castings Co.** at Richmond, Va., was announced in the *Railway Age* of July 30, was graduated from Columbia University and also took graduate work at the University of Chicago and at Northwestern University. He enlisted in the United States Army as a

John R. Kingman

private in 1940 and was released from active service with the rank of captain of infantry in March, 1946. He joined the engineering department of National Malleable at Cleveland, Ohio, in December, 1946, and was subsequently transferred to the St. Louis, Mo., office as a field engineer. In 1947, Mr. Kingman was appointed assistant manager of sales, Railway division, at Richmond.

H. L. Bradbury has been appointed to the newly created position of manager of railway sales for the **Elastic Stop Nut Corporation of America,** Union, N. J. Mr. Bradbury was formerly associated with

H. L. Bradbury

the United States Leather Company for more than 15 years. He joined the production department of Elastic Stop Nut in 1941 and was transferred to the sales staff in 1943.

The **A. S. Campbell Company,** Boston, Mass., has purchased, through a newly formed subsidiary, the assets of the **Rollins Engine Company,** Nashua, N. H. The new company will be known as the

Rollins Engine & Machine Co. and will maintain its present plant and organization at Nashua with **Russell L. Sylvester,** former owner of the Rollins Engine Company, as vice-president and general manager.

Thomas F. Dorsey, general manager of Fort Pitt Steel Casting division of the **Pittsburgh Steel Foundry Corporation** since 1945, has been elected president of the corporation. He was elected a director in 1947 and, in December, 1948, assumed the duties of general manager of the Glassport Foundry as well as Fort Pitt.

Colonel Oscar C. Maier has been appointed director of research for the **Pullman-Standard Car Manufacturing Company,** Chicago. Colonel Maier, who recently resigned from the engineering division of the United States Army Air Forces at Wright Field, Ohio, to accept his new position, is a graduate of the United States Military Academy at West Point, N. Y. He also holds master's degrees from Yale University and the California Institute of Technology. During World War II and the postwar years, he served in various capacities in the signal corps and in engineering capacities with the Army Air Forces.

OBITUARY

Lynn Mahan, vice-president of Theodor Swanson & Co., and formerly assistant to the president in charge of public relations of the American Locomotive Company, was one of the American correspondents and newspaper men who were killed in the recent crash of a Dutch airplane at Bombay, India.

Fredrick K. Vial, who retired in January, 1948, as vice-president and director of the Griffin Wheel Company, Chicago, died at Urbana, Ill., on July 27, at age of 85. Born on April 22, 1864, at Lyonsville, Ill., Mr. Vial received his higher education at the University of Illinois, having been awarded degrees in agriculture and natural history in 1886 and a master's degree in civil engineering in 1918. His first railroad service came in 1887, when he was employed as a rodman with the Atchison, Topeka & Santa Fe. He served as division engineer of the Chicago & Alton (now part of the Gulf, Mobile & Ohio) from 1889 to 1892, and was chief engineer of the Ajax Forge Company, at Chicago during 1895 and 1896. In the following year, Mr. Vial became principal assistant engineer of the Chicago & Western Indiana, and in 1902 joined the Griffin Wheel Co., as mechanical engineer. In 1906 he was appointed chief engineer, in charge of manufacturing operations, cupola mixtures, wheel design, plant construction and research work. In addition, he was given other responsibilities affecting all plants of the company. Later Mr. Vial was elected vice-president, and in 1917 was also elected a director. Upon the formation of the Association of Manufacturers of Chilled Car Wheels in 1908, he was appointed consulting engineer and subsequently became also vice-president, which position he also held at the time of his retirement.

Charles S. Langworthy, traffic manager of the General Railway Signal Company, died on July 26 at his home in Rochester, N. Y. Mr. Langworthy was born in Rochester on March 24, 1892, attended the public schools there, and completed an extension course in traffic management at LaSalle University. In 1907 he joined the American Woodworking Machine Company in Rochester, as shipping and receiving clerk, and remained with that organization until 1927, when he transferred to the Pullman Manufacturing Company in Rochester in a similar capacity. Mr. Langworthy joined the traffic department of General Railway Signal in 1929 and was appointed traffic manager in 1936.

Charles S. Langworthy

FINANCIAL

Chicago, Burlington & Quincy.—*Trackage Rights.*—This road has applied to the Interstate Commerce Commission for authority to acquire trackage rights over the line of its lessor, the Colorado & Southern, between Utah Junction, Colo., and Prospect, approximately 2.3 miles. The application said that the C.B.&Q. has heretofore reached Utah Junction by its own Buckwheat line, which is to to be cut by the new Valley highway at Denver.

Montana, Wyoming & Southern.—*Bond Modification.*—With amendments, including one which would more than double the proposed cash payment to affected bondholders, Division 4 of the Interstate Commerce Commission has approved this road's plan for modifying its first-mortgage gold bonds under provisions of the so-called Mahaffie Act (now section 20b of the Interstate Commerce Act). The division's report in Finance Docket No. 16530 authorized submission of the plan, as modified by the required amendments, to interested security holders for acceptance or rejection.

As proposed in the M. W. & S.'s application, the modification would have involved payment of $150 in cash on each $850 bond outstanding, and extension of the maturity date of the remaining $700 from September 1, 1949, to September 1, 1959. The $850 denomination of the bonds reflects a payment of $150 on principal, made when the maturity date was previously extended from September 1, 1939, to September 1, 1949. The bonds now outstanding in the hands of the public total $262,650. The cash payment required by the commission-prescribed amendment would be $350 on each bond. In making that determination, the commission found that the road has in its treasury about $200,000 in cash and marketable securities while it requires only about $25,000 for working capital. The commission went on to calculate that payment of the $350 on each bond would still leave in the treasury "more than $90,000 in cash and marketable securities for working capital and a reserve against years of unprofitable operations, which appears to be adequate for these purposes."

The road had planned to retain the $175,000 above working capital as a reserve against operating losses and for purchase of the bonds whenever it could do so at a "favorable discount." As to that the commission said that it would not be in the best interest of the bondholders "to extend the maturity of their maturing bonds and at the same time permit applicant to use its large holdings of cash to acquire them at a discount . . ."

Other commission amendments would modify the interest on the extended bonds, establish a sinking fund for their retirement, and prohibit payment of dividends on the road's common stock until all of the bonds are retired. As to interest, the road had proposed that the portion of the bonds extended bear the same interest rate as at present—a fixed rate of 3 per cent, plus non-cumulative contingent interest up to an additional 2 per cent in any year, dependent upon earnings. The commission-prescribed amendment would make the contingent 2 per cent fully cumulative. There were no provisions in the road's proposal for a sinking fund to retire the bonds, or for the withholding of common dividends pending such retirement. Actually, no dividend has been paid on the common, consisting of 10,000 no-par shares, since it was issued in 1909.

New York Central.—*Lease of Mount Gilead Short Line.*—Division 4 of the Interstate Commerce Commission has approved arrangements under which this road's lessor, the Toledo & Ohio Central, will continue to lease the properties of the Mount Gilead Short Line for a 10-year period from June 1, 1949. The same report also approved a new agreement under which the N.Y.C. will continue to operate the leased properties.

New Securities

Application has been filed with the Interstate Commerce Commission by:

Kansas City & Brookfield.—To issue $50,000 of capital stock, proceeds of which would be used in construction of a proposed new line and for general corporate expenses. The Chicago, Burlington & Quincy now has pending an application for authority to acquire control of the Brookfield, which was recently organized to construct a 45-mi. section of the Burlington's proposed new route between Chicago and Kansas City (see *Railway Age* of February 26, 1949). The application said the proposed issue of the K. C. & B. was for the purpose of carrying out the stock subscription requirements of the Missouri law.

Division 4 of the I.C.C. has **authorized**:

Chicago Great Western.—To assume liability for $6,150,000 of equipment trust certificates to finance in part 27 Diesel-electric locomotives and 500 50-ton box cars delivered in 1947 and 1948 and now used under conditional sales agreements, and 12 new Diesel-electric locomotives and two caboose cars. Total estimated cost of the existing equipment is $6,659,768, and of the new equipment $2,111,350. The certificates will be dated July 1 and will mature in 30 semiannual installments of $205,000 each, beginning January 15, 1950. The report approved a selling price of 99.2807 with a 2¾ per cent interest rate—the bid of Salomon Brothers & Hutzler and three associates, which will make the average annual interest cost approximately 2.86 per cent. The certificates were reoffered to the public at prices yielding from 1.4 to 2.95 per cent, according to maturity.

Average Prices Stocks & Bonds

	Aug. 2	Last week	Last year
Average price of 20 representative railway stocks	37.51	37.69	48.63
Average price of 20 representative railway bonds	85.47	85.24	90.46

Dividends Declared

Cleveland & Pittsburgh.—4 per cent special guaranteed, 50c, quarterly; 7 per cent regular guaranteed, 87½c, quarterly; both payable September 1 to holders of record August 10.

Gulf, Mobile & Ohio.—$5.00 preferred, $1.25, quarterly, payable September 30, December 28, March 30, 1950, and June 30, 1950 to holders of record September 12, December 8, March 10, 1950, and June 12, 1950.

New York, Chicago & St. Louis.—6% preferred A (accum.), $1.50, payable October 1 to holders of record September 2.

Southern.—$1.00, quarterly, payable September 15 to holders of record August 15.

CONSTRUCTION

Atchison, Topeka & Santa Fe.—This road has awarded a contract to L. J. Hesser, Greeley, Colo., for work in connection with construction of a new hump yard at Pueblo, Colo. The contract covers clearing, grading and excavation for channels, pipe and box culverts; construction of yard drains, retarder foundations, inspection pit, scale pit and runway pavement, and hauling and placing pipes, box culverts, pipe headwalls and other concrete structures.

Elgin, Joliet & Eastern.—Company forces of this road will install 2,184 ft. of track, including six No. 10 turnouts, and relocate one No. 10 turnout, at Kirk Yard Junction, Gary, Ind., at a cost of $24,985. Also authorized is installation of 5,000 lin. ft. of gravity type 18-in. concrete sewer from existing sewer at Pine, Ind., to Buffington Harbor, at a cost of $37,675.

Great Northern.—This road has approved the following projects to be completed by company forces at the estimated costs shown in parentheses: Repair ore docks at Allouez, Wis. ($398,400); perform bridge and culvert work on the Dakota division ($32,509) and at Spokane, Wash. ($115,410); renew bridge M 76 at Palouse, Wash. ($53,760); repair buildings on Kalispell (Mont.) division ($30,615); repair trucking tunnel at passenger station in Minneapolis, Minn. ($25,000), and perform work on platform and tracks at East Grand Forks, Minn. ($22,000). Bids have been requested for an addition to the truck garage at Great Falls, Mont., at an estimated cost of $126,200, and plans for contemplated work on overhead bridges on Thurman street, Seattle, Wash., are being discussed with representatives of that city. The latter work will cost an estimated $116,850.

Green Bay & Western.—This road has completed the replacement of 70-lb. rail with 90-lb. rail on 7.95 mi. of track, and expects to relay a similar amount during August and September. The Luedtke Engineering Company, Frankfort, Mich., has been awarded a contract for the replacement of 291 ft. of timber revetment with steel, at Kewaunee, Wis., at an estimated cost of $60,000.

EQUIPMENT AND SUPPLIES

Domestic Equipment Orders Reported in July

Domestic orders for 14 Diesel-electric locomotive units and 125 freight cars were reported in *Railway Age* in July. No orders for passenger cars were reported. The estimated cost of the locomotives is $1,830,000 and of the freight cars $850,000. The accompanying table lists the orders in detail.

During the first seven months of 1949, *Railway Age* has reported domestic orders for 3,710 freight cars and 30 passenger cars, costing an estimated $18,730,000; and 495 Diesel-electric locomotive units, 13 steam and 7 electric locomotives, the estimated cost of which is $75,459,800.

Locomotives

Date	Purchaser	No.	Type	Builder
July 9	Manitou & Pike's Peak	2	400-hp. D.-E. units	General Electric
July 16	Erie	1	1,000-hp. D.-E. sw. units	Baldwin
		6	1,500-hp. D.-E rd.-sw. units	Baldwin
July 16	Union (Pittsburgh, Pa.)	5	1,500-hp. D.-E. sw. units	Baldwin

Freight Cars

July 23	S.A.L.	25	Caboose	Int'l Ry. Car
July 30	Solvay Process Co.	100	Alum. Tank	General American

LOCOMOTIVES

The **Nashville, Chattanooga & St. Louis** has ordered six 1,500-hp. Diesel-electric road switching locomotives, at an estimated unit cost of $135,304 each, and four 1,000-hp. Diesel-electric yard switching locomotives, at an estimated unit cost of $97,924 each. The locomotives, to be built by the Electro-Motive Division of General Motors Corporation, LaGrange, Ill., are scheduled for delivery in November or December.

SIGNALING

The **Missouri-Kansas-Texas** has ordered from the Union Switch & Signal Co. material to install automatic block signaling on approximately 20 mi. of single-track line between Grandview, Tex., and Hillsboro, involving searchlight signals, relays, switch circuit controllers, rectifiers, transformers and housings. Field installation work will be handled by railroad forces.

The **Southern** has ordered materials from the General Railway Signal Company for the installation of a Type K two-wire coded remote control system. The control machine, to be located at Inman yards, Atlanta, Ga., will have an 18-in. by 34-in. panel equipped with 18 track indication lamps and 13 levers for control of 8 switch machines, 4 switch locks, and 17 signals. Model 9A electric switch locks, model 5D dual-control electric switch machines, type B plug-in relays and welded steel bungalows will be used in this installation.

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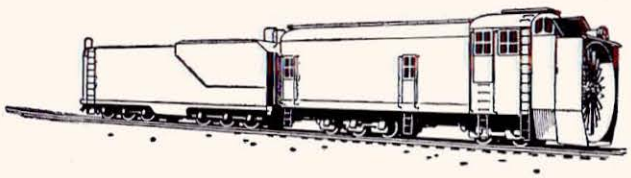


We are building

ROTARY SNOW PLOWS

of a new and more powerful design

We have just received an order for two large rotary snow plows from the Union Pacific and one from the Soo Line. There are several other roads considering the purchase of plows of our new design.

Remembering last winter's experience, you too may want to consider new rotary equipment — with delivery in time to meet this coming winter's snows.

LIMA HAMILTON CORPORATION

DIVISIONS: *Lima, Ohio* — Lima Locomotive Works Division; Lima Shovel and Crane Division. *Hamilton, Ohio* — Hooven, Owens, Rentschler Co.; Niles Tool Works Co. *Middletown, Ohio*—The United Welding Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Special heavy machinery; Heavy iron castings; Weldments.

RAILWAY OFFICERS

EXECUTIVE

Glenn H. Caley, vice-president, general manager, and director of the Delaware & Hudson at Albany, N. Y., has resigned because of ill health.

J. C. James, vice-president and general counsel of the Chicago, Burlington & Quincy, Chicago, has been elected executive vice-president and general counsel, effective September 1. **S. L. Fee,** general manager, Lines West, with headquarters at Omaha, Neb., has been promoted to vice-president—operation at Chicago, also effective September 1, to succeed **Harry C. Murphy.** As noted elsewhere in the news section of this issue, Mr. Murphy will become president of the Burlington upon the retirement of *Ralph Budd* on August 31.

C. E. Smith, vice-president, purchases and stores, of the New York, New Haven & Hartford at New Haven, Conn., has retired after nearly 25 years of service. As noted elsewhere in this issue, Mr. Smith's duties have been assumed by **C. H. McGill,** manager, purchases and stores.

FINANCIAL, LEGAL & ACCOUNTING

C. A. Knowles, assistant to comptroller of the Chesapeake & Ohio at Richmond, Va., has retired and his duties have been assumed by **V. H. Doyle,** whose appointment as valuation engineer of the C. & O. system is noted elsewhere in these columns.

A. E. Callin, senior assistant general auditor of the Union Pacific, with headquarters at Omaha, Neb., has been promoted to general auditor, with the same headquarters, succeeding **R. Wipprecht,** who has retired after more than 30 years of U. P. service. **R. M. Sutton,** assistant general auditor at Omaha, has replaced Mr. Callin, and has been succeeded in turn by **E. M. Kerrigan,** auditor of disbursements at that point **E. R. Miller,** accountant, has replaced Mr. Kerrigan, and **G. A. O'Keefe,** chief clerk of miscellanous accounts, has succeeded the late **B. D. Landau** as auditor of miscellaneous accounts at Omaha, Mr. Landau's death was reported in the *Railway Age* of June 25.

Mr. Callin, who was born at Shakespeare, Ont., on December 4, 1881, received his education in the public and commercial schools of Canada. He was employed from 1901 to 1909 as bookkeeper, cashier and clerk by a live stock commission and a meat packing company, entering U. P. service in 1909 as a clerk in the disbursement accounting department at Omaha. He subsequently served as chief clerk until his appointment as an accountant for the United States Railway Administration in 1919. Returning to the U. P. in 1922, he held the positions of accountant and statistician in the general auditor's office to 1940, when he was promoted to assistant general auditor. Mr. Callin was advanced to senior assistant general auditor in 1945.

Mr. Wipprecht began his railroad career in 1907 as a clerk and agent of the Texas & Gulf (now part of the Gulf, Colorado & Santa Fe) at Timpson, Tex., and subsequently served as traveling accountant for the Galveston, Harrisburg & San Antonio (now part of the Southern Pacific Lines in Texas and Louisiana) at Houston, Tex. In February, 1918, he joined the Oregon Short Line (U. P. subsidiary) as special accountant at Salt Lake City, Utah, later being appointed chief clerk, disbursements accounting department. He was promoted to auditor of disbursements in 1920 and to auditor of freight accounts 10 years later. In 1932 he returned to Salt Lake City as auditor of the O. S. L., and in January, 1936, was promoted to assistant to general auditor, U. P. system, at Omaha. Mr Wipprecht became assistant general auditor of the U. P. in April, 1940, and was advanced to general auditor in September of the following year, in which capacity he served until his retirement.

A. E. Callin

Everett Arthur White, whose promotion to auditor of freight accounts of the Chicago, Burlington & Quincy, with headquarters at Chicago, was reported in the *Railway Age* of July 16, was born on February 6, 1895, at Steffensville, Mo., and was graduated from high school at Palmyra Mo., in 1913. He subsequently attended Westminister College, Fulton, Mo., for two years, and in July, 1915, entered railroad service with the Burlington as station helper at Palmyra. From December, 1915, to April, 1929, he served successively as clerk in the general office at Chicago and as traveling auditor on the Sheridan (Ill.), Beardstown, and Casper (Wyo.) divisions. He later returned to the general office at Chicago as chief clerk to auditor of freight accounts, being appointed chief clerk to car accountant there in 1935. The following year he was appointed auditor of the Burlington Transportation Company (subsidiary of the Burlington Lines) at Chicago, and in 1937 became assistant auditor of the C. B. & Q. at the same point. Mr. White was appointed car accountant at Chicago in 1939, which position he held until his recent promotion.

OPERATING

L. T. Riggs, assistant trainmaster of the Missouri Pacific, at Little Rock, Ark., has been promoted to trainmaster, Joplin division, with headquarters at Nevada, Mo., succeeding **C. W. Graves,** who has been transferred to the Central division, with headquarters at Van Buren, Ark. Mr. Graves succeeds **R. B. Butler,** who has retired.

Pete J. Weiland, whose promotion to superintendent of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Ottumwa, Iowa, was reported in the *Railway Age* of July 23, was born at Marion, S. D., on July 5, 1902. He entered railroad service with the Milwaukee in July, 1916, in the maintenance of way department, subsequently serving as laborer, section foreman and extra gang foreman on the Iowa and Dakota division until his appointment in 1927 as roadmaster on the Kansas City division, at Ottumwa. In 1939 he became trainmaster at Austin, Minn., and in 1943 was transferred to the Superior division at Green Bay, Wis. From November, 1945, to January, 1947, Mr. Weiland was trainmaster on the La Crosse and River division, at Portage, Wis. He was later advanced to assistant superintendent, Dubuque and Illinois division, at Dubuque, Iowa, in which capacity he was serving at the time of his promotion.

Pete J. Weiland

J. G. Tucker, assistant superintendent of the Texas & Pacific at Big Spring, Tex. (territory, Big Spring and Toyah sub-divisions, including Big Spring yard), has been appointed assistant superin-

tendent at the same point (territory, Fort Worth and Baird sub-divisions), succeeding **D. E. Crouser,** who has retired at his own request. Mr. Tucker is succeeded by **A. C. LaCroix. J. H. Williams** has been appointed trainmaster, Louisiana division, with headquarters at Alexandria, La., succeeding **O. C. Prewitt,** who has been assigned other duties.

T. J. Anderson, whose promotion to superintendent, Missouri division, Atchison, Topeka & Santa Fe, with headquarters at Marceline, Mo., was reported in the *Railway Age* of July 9, was born at Rising, Ark., on August 25, 1901. He entered railroad service in April, 1918, as a telegraph apprentice on the Pecos division of the Santa Fe and the following June became a telegraph operator. He also held the positions of operator

T. J. Anderson

and agent, and in 1925 was promoted to dispatcher, subsequently serving as extra dispatcher, dispatcher, operator and regular dispatcher. Mr. Anderson was advanced to trainmaster at Clovis, N. M., in August, 1942. He left the Pecos division in January, 1946, to become trainmaster on the Missouri division at Slaton, Tex., and later served in the same capacity at Dodge City, Kan., and Chillicothe, Ill., until his recent promotion.

George D. Hughey, assistant vice-president and assistant general manager of the Delaware & Hudson, has been appointed general manager, in charge of operations, maintenance, construction and purchases and stores, with headquarters as before at Albany, N. Y., succeeding **Glenn H. Caley,** whose retirement is noted elsewhere in these columns. **P. O. Ferris,** chief engineer, has been appointed to succeed Mr. Hughey as assistant general manager. Mr. Ferris will also retain his post of chief engineer, with headquarters at Albany.

R. N. Begien, Jr., superintendent of the Hocking division of the Chesapeake & Ohio, has been appointed assistant general superintendent, Western General division, Chesapeake district, with headquarters at Huntington, W. Va., succeeding **Robert G. Vawter,** whose promotion to general superintendent of the Eastern General division at Clifton Forge, Va., succeeding **Lee A. Grubbs,** retired, was reported in the July 9 *Railway Age*. Mr. Begien has been succeeded in his former post by **O. K. Lawson,** who has been superintendent of terminals at Walbridge, Ohio. **W. S. Butler, Jr.,** assistant superintendent at Covington, Ky., has succeeded Mr. Lawson, and been replaced by **S. G. Waite,** formerly trainmaster at Stevens, Ky.

Earle E. McCarty, whose retirement as general manager of the Atchison, Topeka & Santa Fe's Coast Lines at Los Angeles, Cal., was reported in the *Railway Age* of July 23, was born at Winona, Minn., on March 20, 1882. Mr. McCarty learned telegraphy at the age of 12 in the office of his father, who was an operator-agent. After several years' service in a Western Union office, he entered railway service as an operator-agent on the Los Angeles division of the Santa Fe in November, 1899. In 1903 he was promoted to dispatcher and four years later was advanced to chief dispatcher, serving in this capacity at Needles, Cal., and Fresno. He was appointed general inspector of transportation at Los Angeles in 1909, and three years later became a trainmaster, serving in this capacity at Gallup, N. M., Winslow, Ariz.,

Earle E. McCarty

Needles, and San Bernardino, Cal. From 1917 to 1919, Mr. McCarty was connected with the United States Railroad Administration — general agent for the troop movement section at Camp Kearney, Cal. From the end of this period until 1923, he served as trainmaster on the Santa Fe at various points, and in the latter year was advanced to assistant superintendent at Needles, being reappointed trainmaster a year later. In 1926, after serving as trainmaster on the Albuquerque, Los Angeles and Arizona divisions, he was appointed acting superintendent of the Albuquerque division, at Winslow, Ariz., advancing to the superintendency six months later. Mr. McCarty was promoted to assistant general manager of the Western lines at La Junta, Colo., on October 1, 1932, and on January 10, 1937, was further advanced to assistant to the vice-president, with headquarters at Chicago. In June, 1939, he was appointed general manager at Los Angeles, and on May 1, 1945, became director of the Railway Transport Division of the Office of Defense Transportation at Washington, D. C. He returned to the Santa Fe as general manager at Los Angeles on March 1, 1946, and continued at that point until his retirement.

G. F. Bacon has been appointed superintendent passenger transportation of the Boston & Maine at Boston, Mass.

Nelson E. Kidder has been appointed superintendent freight transportation of the Boston & Maine at Boston, Mass. His former post of supervisor, less-than-carload service, has been abolished. Mr. Kidder began his railroad career in 1906 as station helper with the B. & M. at East Jaffrey, N. H. He was subsequently agent, superintendent's clerk, car distributor, traveling agent, freight assistant to the superintendent and transportation inspector of freight. In 1942 he was given leave of absence to go with the Office of Defense Transportation as district director, division of railway transport, returning to the B. & M. in 1944 as supervisor, l.c.l. service.

W. H. Towne has retired and his position as freight assistant of the Boston & Maine has been abolished.

J. D. Hayes, trainmaster, Capreol division, of the Canadian National, at Capreol, Ont., has been promoted to assistant superintendent at Lindsay, Ont., succeeding **T. H. Ward,** whose promotion to superintendent of terminals of the Grand Trunk Western at Port Huron, Mich., was announced in the *Railway Age* of July 30. **G. H. Sanderson,** trainmaster at Garneau, Que., has been transferred to Capreol, succeeding Mr. Hayes, and **M. G. Marceau,** transportation assistant at Montreal, Que., succeeds Mr. Sanderson at Garneau.

TRAFFIC

Harry R. Carl, assistant general freight agent of the Great Northern at St. Paul, Minn., will retire on August 8, after nearly 50 years of service with the road.

James M. Donovan, traveling freight agent, has been appointed assistant general freight agent of the New York Central, with headquarters at Albany, N. Y., succeeding the late **F. J. Osborne,** whose death was reported in the *Railway Age* of July 2.

L. S. Hartley, agricultural agent of the Baltimore & Ohio for West Virginia, western Maryland and western Pennsylvania, at Morgantown, W. Va., has been appointed manager of agricultural de-

velopment of the B. & O. system, at Baltimore, Md., succeeding the late **O. K. Quivey**, whose death was reported in the *Railway Age* of July 30.

John C. Gutsch, freight traffic manager of the Chicago, Rock Island & Pacific, Chicago, has retired following 52 years of service with the railroad.

C. E. Larsen has been appointed chief of tariff bureau of the Chicago, Burlington & Quincy, with headquarters at Chicago, succeeding **Charles H. Bruha**, whose promotion to assistant general freight agent in charge of fuel department rate work at Chicago was reported in the *Railway Age* of July 30.

F. L. Wagner, district passenger agent of the Denver & Rio Grande Western, at San Francisco, Cal., has retired from service, and has been succeeded by **R. G. DeGuire**, city passenger agent.

MECHANICAL

Ernest K. Bloss, mechanical engineer of the Boston & Maine at Billerica, Mass., has been appointed mechanical superintendent of the B. & M. and the Maine Central. **Donald McKeown**, assistant mechanical engineer, has been appointed mechanical engineer of the B. & M. and the M. C., with headquarters as before at Billerica. Mr. Bloss was born at Worcester, Mass., on April 16, 1896, and was graduated from Worcester Polytechnic Institute (B. S., 1918). He received a degree in electrical engineering in 1921. From 1918 to 1919 he was assistant power and electrical engineer, Remington Arms, and from 1920 to 1925 served as railway engineer for the Westinghouse Electric & Manufacturing Co. He entered railroad service in 1926 as assistant electrical engineer of the Boston & Maine, becoming supervisor rail motor cars in 1929 and supervisor Diesel maintenance and operation of the B. & M. and M. C. in 1944. Mr. Bloss had been serving as mechanical engineer since September, 1947.

The equipment department of the New York Central, lines East, and of the Boston & Albany, have been reorganized as follows: The master mechanic at Buffalo, N. Y., will have jurisdiction over both locomotive and car departments on the Buffalo, Rochester, Syracuse and St. Lawrence divisions. The master mechanic at Albany, N. Y., will have jurisdiction over both locomotive and car departments on the Mohawk, Adirondack and River divisions; locomotive department on the Hudson, Harlem and Putnam divisions; car department on the Hudson division East, to and including Poughkeepsie, N. Y.; car department at Chatham, N. Y., and both locomotive and car departments at Hudson, N. Y.

The positions of master mechanic at Harmon, N. Y., and East Syracuse (Dewitt) are abolished and changed to assistant master mechanics, reporting directly to master mechanics at Albany and Buffalo, respectively. The positions of division general car foremen at Albany and Buffalo are abolished and changed to assistant master mechanics, also reporting to master mechanics at Albany and Buffalo, respectively.

Headquarters of the master mechanic on the Boston & Albany have been changed from Springfield, Mass., to Boston, Mass., with jurisdiction of this office extending over both locomotive and car departments, except at Hudson, which is now under jurisdiction of the master mechanic at Albany, as noted above. The position of division general car foreman of the B. & A. has been abolished.

The jurisdiction of the master mechanic at Avis, Pa., and the division general car foreman at New York (Mott Haven) will remain unchanged, except that the master mechanic at Albany has assumed supervision of the car department at Chatham, as noted above.

H. S. Mercer, shop superintendent, locomotive department, of the Seaboard Air Line at Jacksonville, Fla., has been promoted to assistant chief mechanical officer, with headquarters at Norfolk, Va. He is succeeded by **L. B. Alexander**, formerly assistant shop superintendent, locomotive department, at Jacksonville. The headquarters of **D. M. Wood**, Diesel superintendent, have been changed from Jacksonville to Norfolk where he will report to the chief mechanical officer. **V. H. Dunford**, general master boilermaker, at Norfolk, has retired after 51 years of active service.

William L. Lentz, vice-president of the American Locomotive Company at New York, has been appointed superintendent of equipment of the Delaware & Hudson, with headquarters at Albany, N. Y. Mr. Lentz succeeds to the duties of **George W. Ditmore** and **G. S. Edmonds**, who have retired at their own requests from the posts of superintendent of car equipment and superintendent of motive power, respectively. Their former positions have been abolished.

Mr. Lentz was born at Jersey Shore, Pa., on January 29, 1895, and began his railroad career in 1913 by taking a special apprentice course in the locomotive shops of the New York Central. Following World War I service as an army aviation corps lieutenant, Mr. Lentz rejoined the N. Y. C. and advanced to the position of engineer of motive power in the engineering department at New York. He joined the Standard Stoker Company in 1937 as assistant to the vice-president and sales manager. In 1940 he was appointed manager of the American Locomotive Company's Schenectady, N. Y., plant and, in 1945, vice-president in charge of manufacturing. He was a member of American Locomotive's administrative committee, and in January, 1948, also assumed the duties of senior vice-president, his duties including general railroad engineering contacts, studying and promoting progress and improvements in motive-power designs for domestic and foreign railroads, research, and assistance to all divisions in their engineering and manufacturing activities.

Mr. Ditmore was born at Jermyn, Pa., on February 17, 1878. Entering railroad service on June 1, 1897, as car inspector of the D. & H., his subsequent career was spent in the service of that road. From March, 1902, to December, 1913, he was employed first as interchange inspector at Scranton, Pa., and later as foreman car inspectors and repairers at Scranton, Buttonwood, Pa., and Wilkes-Barre. In December, 1913, he became shop foreman at Carbondale, Pa., being appointed division car foreman, Pennsylvania division, in 1917; assistant master car builder at Colonie, N. Y., in November, 1918, and master car builder on January 1, 1919. Mr. Ditmore held the post of superintendent of car equipment—from which he now retires—since March 1, 1944.

William L. Lentz

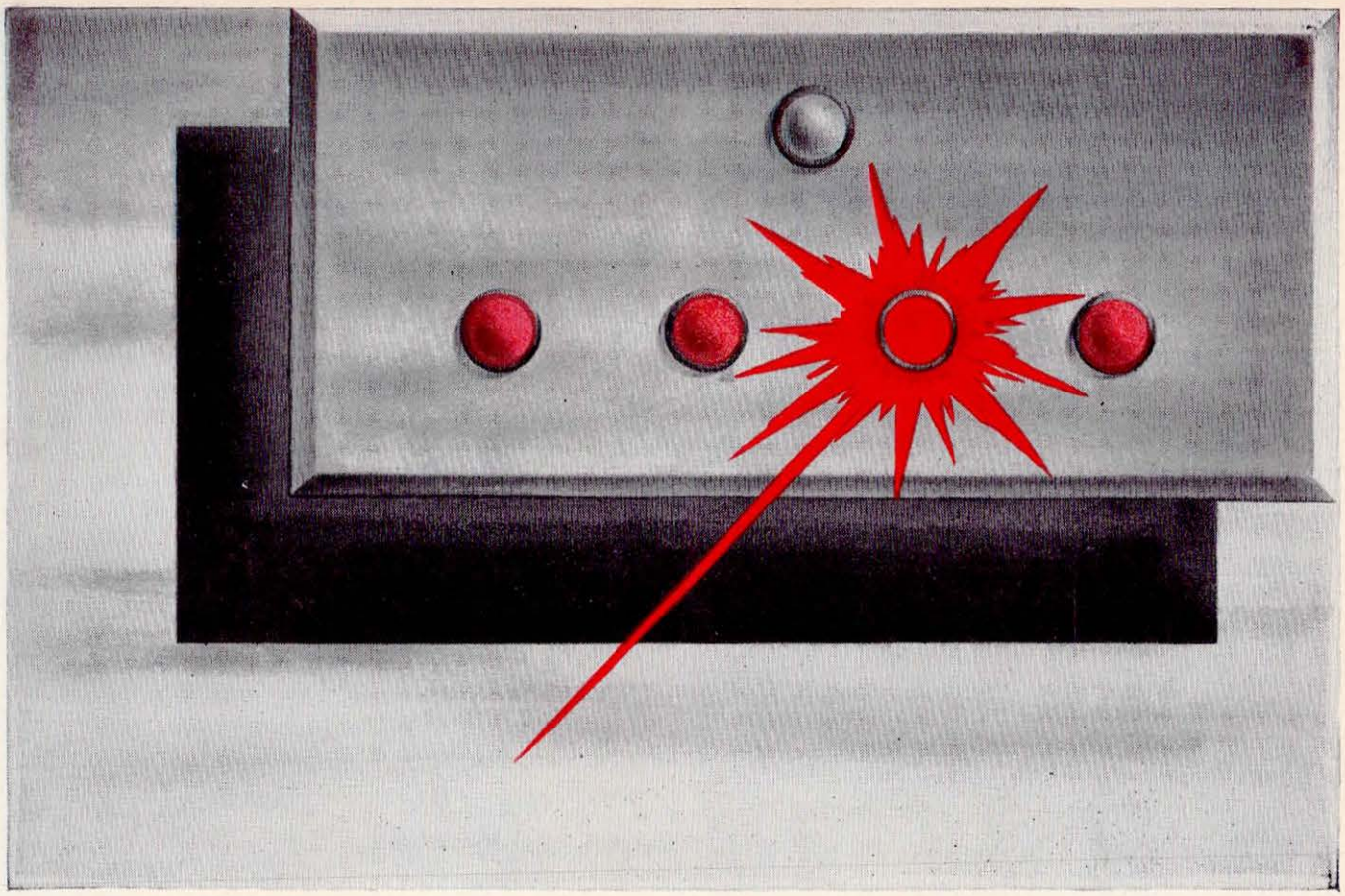
Mr. Edmonds was born on March 19, 1873, at Glen Cove, N. Y., and was graduated from Cornell University in 1895. He entered railroad service in August, 1895, as inspector in machine shops of the New York Central & Hudson River (now New York Central), serving in that capacity until 1897, when he became employed in the drafting room of the same road. In 1900 and subsequently thereafter he was employed by the D. & H., first as mechanical engineer, then, in October, 1905, as master mechanic, Susquehanna division at Oneonta, N. Y., and in August, 1912, as superintendent of shops at Colonie, which position he held until April, 1920, when he was appointed superintendent of motive power at Albany, the post from which he has retired.

PURCHASES & STORES

John Crawford, fuel agent of the Chicago, Burlington & Quincy at Chicago, retired on July 1.

C. H. McGill has been appointed manager, purchases and stores, of the New

News Department continued on second left-hand page



this new device keeps an *Electric Eye* on the bearings

The Westinghouse-Union Hot Bearing Detector brings an important new safeguard to passenger equipment. It solves the problem of hot bearing detection.

Any undue rise in the temperature of an individual bearing is immediately detected and reported—by red light to the train crew, by signal whistle to the engineer—BEFORE any damage results.

The device disregards temperature fluctuations due to weather and operating conditions; only the abnormal, threatening rise causes it to react.

Leaflet No. 2464 gives the complete story of principle and operation. We will be glad to send you a copy.

Westinghouse Air Brake Co.

WILMERDING, PA.

Brakes are Basic to Railroad Progress

OPERATION: Livestock

27 Hours Instead of 58

ONE OF THE most remarkable advances in freight service ever scored by Diesel locomotives is the Union Pacific's non-stop Diesel-powered "Day Livestock" running from Salt Lake City to Los Angeles.

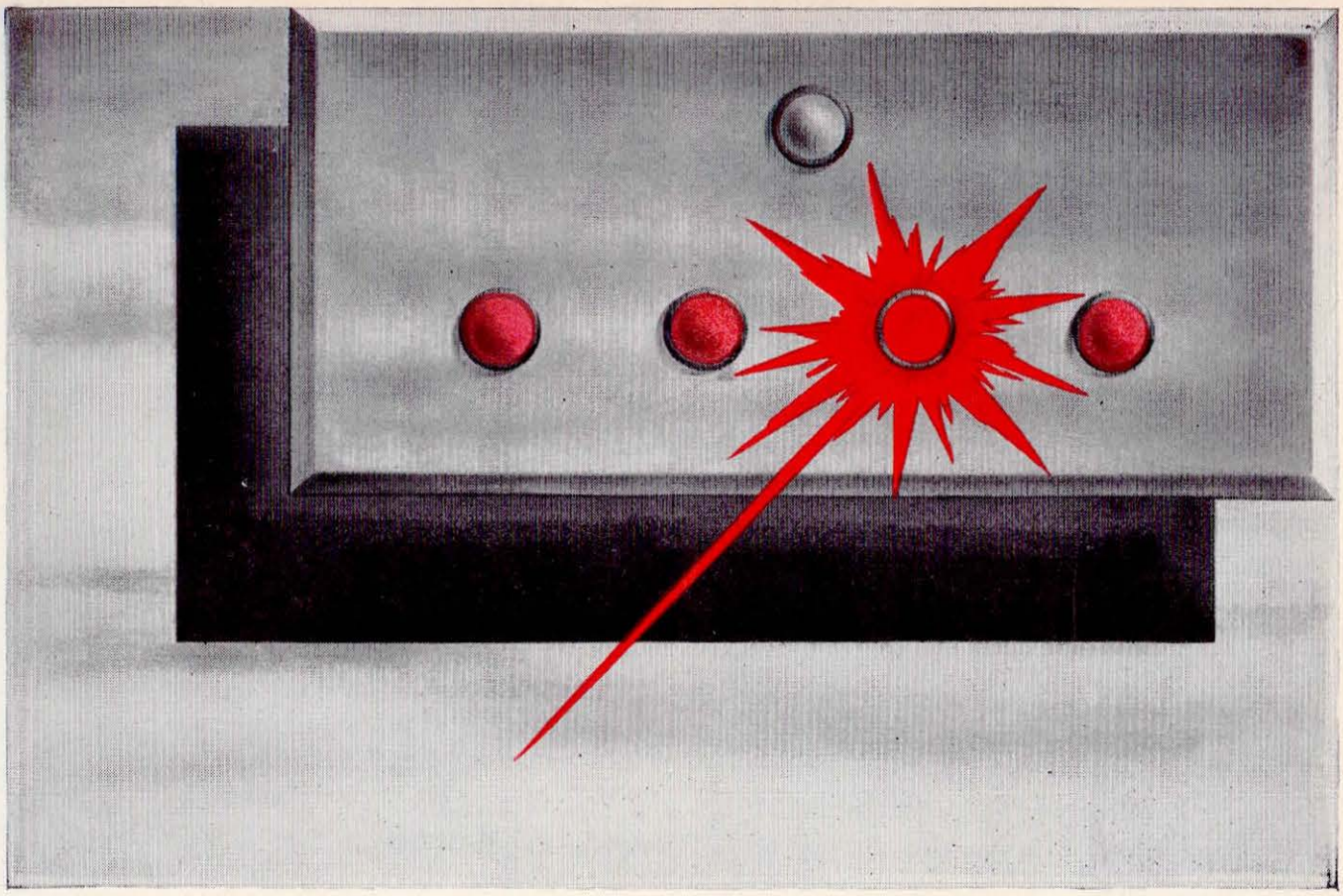
Inaugurated with General Motors Diesels in March 1947, the trains make the 785-mile run in 27 hours instead of the 58 hours required with steam.

The old schedule called for an intermediate stop at Las Vegas where the stock was unloaded for feed, water and rest. With Diesel power the trains now go straight through, avoiding completely the expense and delay of unloading and reloading en route. The stock arrives a full day earlier and it arrives in better shape due to the jerk-free starting and smooth, dynamic braking of the Diesels.

The operating savings are worth noting, too. Fewer locomotives are needed to do the job, helper service is eliminated, water is no longer a problem and the 6000 h.p. General Motors Diesels use only 3,500 gallons of fuel oil to haul a 3,000-ton pay load over the entire distance.

Think of it! Only a little more than one gallon of oil to move a ton of freight from Salt Lake City to Los Angeles.

Here's another splendid example of the way General Motors locomotives have helped progressive railroads set the pattern for faster, more efficient and more economical railroad service.



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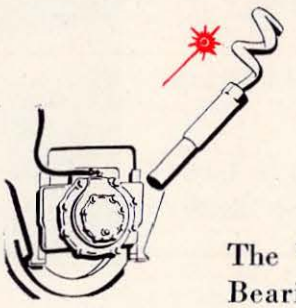

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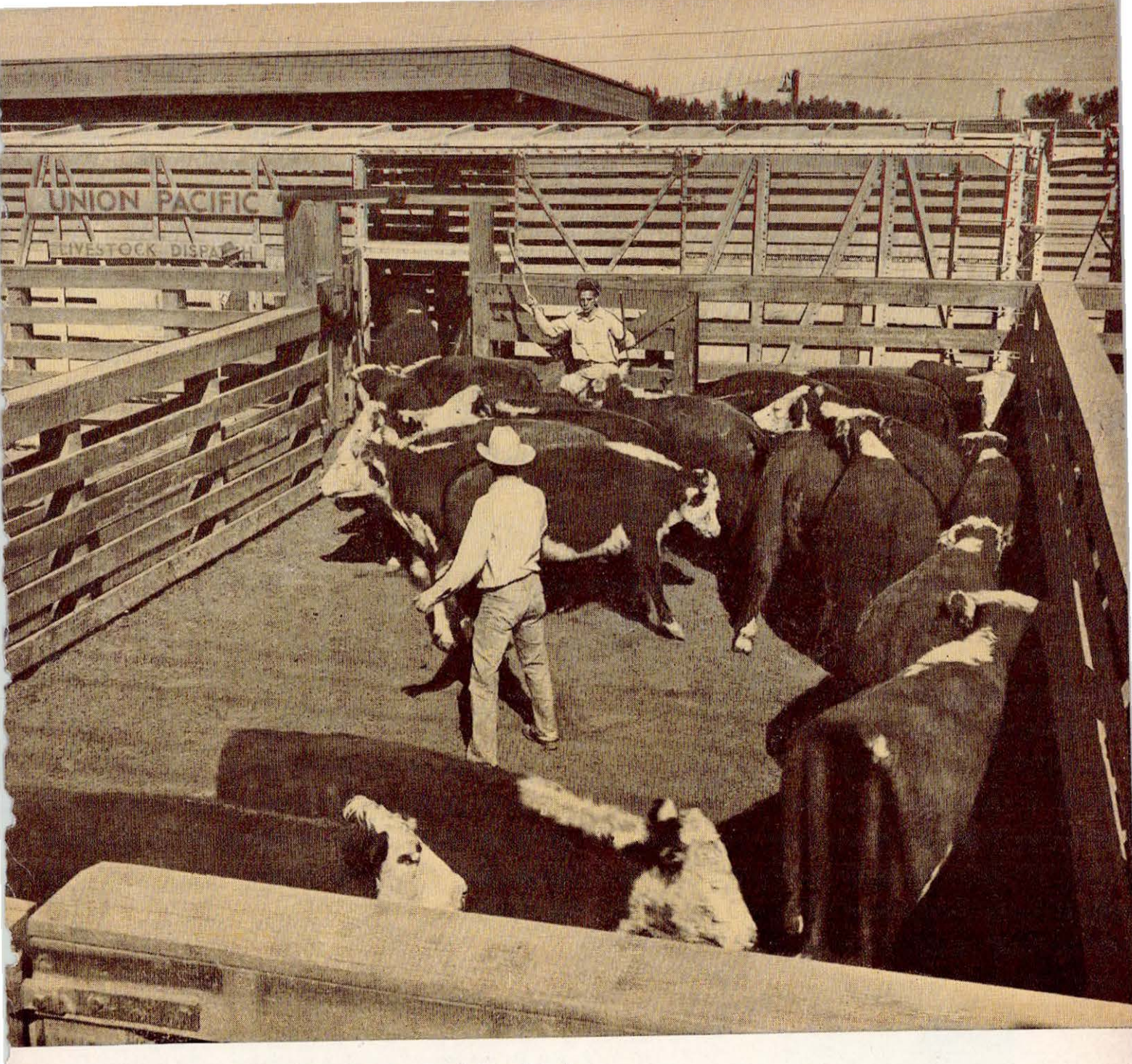
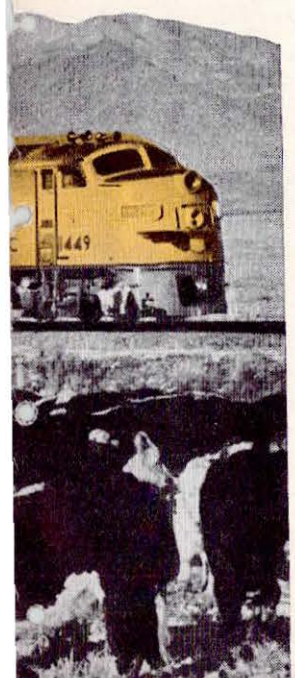


Loaded in the daytime at Salt Lake City, the stock reaches Los Angeles the following day, taking the cool of the night for the trip through the scorching deserts of Nevada and California.



ELECTRO-MOTIVE

GENERAL MOTORS LOCOMOTIVES

DIVISION OF GENERAL MOTORS • LA GRANGE, ILL.

Home of the Diesel Locomotive

York, New Haven & Hartford, with headquarters at New Haven, Conn., succeeding to the duties of **C. E. Smith,** whose retirement as vice-president purchases and stores, is noted elsewhere in these columns.

ENGINEERING & SIGNALING

V. H. Doyle, office and valuation engineer of the Pere Marquette district of the Chesapeake & Ohio at Detroit, Mich., has been appointed valuation engineer of the system, with headquarters at Richmond, Va. In his new position Mr. Doyle will continue to supervise the valuation accounting work of the Pere Marquette district and also succeeds to the duties of **C. A. Knowles,** who has retired as assistant to comptroller.

Charles Melvin Bishop, whose appointment as signal engineer of the Chicago, Rock Island & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of July 30, was born on March 19, 1909, at Lafayette, Ind., and attended high school in East Dubuque, Ill., and the University of Dubuque, at Dubuque, Iowa. Mr. Bishop entered railroad service as a signal helper on the Illinois Central on July 5, 1932, and two years later became signal maintainer, being advanced to assistant supervisor of signals in March, 1939. He was appointed supervisor of signals in August,

Charles M. Bishop

1939, and signal inspector at Chicago in the early part of 1945. From 1946 to October, 1947, he served as signal supervisor, at Jackson, Miss., and was subsequently transferred to Memphis, Tenn., as field signal engineer. Mr. Bishop was promoted to supervisor of signals at Chicago in January, 1948, the post he held at the time of his recent appointment with the Rock Island.

Frank R. Woolford, whose promotion to chief engineer of the Western Pacific, with headquarters at San Francisco, Cal., was reported in the *Railway Age* of July 16, was born on August 14, 1901, at Little Rock, Ark. He attended the Georgia School of Technology from 1920 to 1924, and entered railroad service on September 1, 1924, as a rodman for the Missouri Pacific at Little Rock. He became an instrumentman in 1925, and, from 1930 to 1935, served successively as engineer of accounts at St. Louis, Mo., and Little Rock, and as instrumentman. He was subsequently appointed assistant engineer and roadmaster at Bonne Terre, Mo., and in September, 1935, was made track supervisor at Dupo, Ill., and later at St. Louis. He became roadmaster at

Frank R. Woolford

El Dorado, Ark., in June, 1939, and in August, 1942, left the road to serve in the United States Army with the 759th Railway Operating Battalion in the European theatre. In January 1946, Mr. Woolford returned to the M. P. as division engineer, Missouri and Memphis divisions, at Poplar Bluff, Mo., being promoted to assistant superintendent of the Joplin-White River divisions at Nevada, Mo., in June, 1948. He joined the W. P. as engineer maintenance of way and structures at San Francisco in December, 1948.

Thomas L. Phillips, whose retirement as chief engineer of the Western Pacific at San Francisco, Cal., was reported in the *Railway Age* of July 16, was born on December 28, 1881, at Alsea, Ore., and studied civil engineering with the International Correspondence Schools. He entered railroad service in March, 1903, as a levelman on the Atchison, Topeka & Santa Fe, engaging in various engineering projects until November, 1905, when he joined the W. P. as resident engineer on construction at Niles, Cal. From 1908 to 1920, he served successively as assistant engineer of construction at the San Francisco terminal, assistant engineer on location and construction of various projects, and as division engineer, Western division, at Sacramento, Cal. He subsequently became employed by the Hutchinson Lumber Company at Oroville, Cal., as chief engineer in charge of location and construction on 25 mi. of railroad. Mr. Phillips returned to the W. P. as assistant engineer at San Francisco in 1921 and became principal assistant engineer in June, 1927. In February, 1941, he was promoted to chief engineer.

Hugh W. Johnson, whose promotion to chief engineer of the Chicago Great Western, at Chicago, was reported in the *Railway Age* of July 16, was born at Atlanta, Ga., on March 2, 1912. He attended high school at Birmingham, Ala., and the Alabama Polytechnic Institute, working summer vacations as a railroad laborer. In December, 1936, he joined the Southern as a rodman at Cincinnati, Ohio, and in January, 1941, became a junior engineer at that point. After serving in a railway operating battalion in India as first lieutenant and captain from May, 1943, to February, 1946, he returned to the Southern as assistant engineer at Cincinnati. Mr. Johnson became assistant chief engineer of the Great Western at Chicago in January, 1949, which post he held until his recent promotion.

OBITUARY

F. C. Kersten, late auditor of freight accounts of the Chicago, Burlington & Quincy at Chicago, whose death was reported in the *Railway Age* of July 16, was born in that city on January 8, 1888, and received his education in the Chicago public schools and at business school. Mr. Kersten worked for Wells Fargo in his native city as a clerk prior to entering service with the Burlington on April 26, 1917. He first served with the Burlington as clerk to auditor of freight accounts, at Chicago, and retained headquarters at the same point continuously up to the time of his death. In 1918 he was appointed traveling auditor, and in 1923 became chief clerk in the office of the comptroller, being advanced to assistant auditor of expenditures two years later. After serving as assistant auditor of miscellaneous accounts from April, 1928, to October of the same year, he was promoted to auditor of miscellaneous accounts. Mr. Kersten was made auditor of expenditures in January, 1936, and became auditor of freight accounts in September, 1938.

The Hammond Vindicator has always advised shippers of strawberries and vegetables to use the rails instead of trucks. . . . The rails are our biggest taxpayers, while the trucks leave nothing tangible upon which the future of the strawberry industry could depend. Left to the trucks entirely, the Louisiana strawberry industry would soon be washed out of the picture. Dependable rail service, such as Illinois Central has given the growers in this area, should certainly be regarded in a more appreciative manner than has been the case in the past few years. . . .

From the Hammond (La.) Vindicator

GENERAL NEWS

(Continued from page 63)

U. P. Engineman Stays in Flaming Cab to Bring Train to Safety

At the risk of his life, H. E. Byer, Union Pacific locomotive engineer, remained at his post aboard the "City of Los Angeles" on July 21, when it struck, and was set on fire, by a stalled truck and trailer loaded with 6,375 gal. of gasoline, at a crossing near Montebello, Cal., 10 mi. east of Los Angeles. Although flames enveloped the Diesel cab and seared his clothing, Byer pulled his train and 190 passengers to safety beyond the burning equipment. As this issue of *Railway Age* goes to press, he is in a critical condition at Angelus hospital in Los Angeles. The fireman, who took refuge in the engine room prior to the collision, received minor burns.

Status of Baltimore & Annapolis

Division 3 of the Interstate Commerce Commission has found that the Baltimore & Annapolis does not fall within the exemption proviso of the first paragraph of section 1 of the Railway Labor Act. The effect of the determination, sought in a petition filed by the Brotherhood of Railroad Trainmen, is to include B. & A. employees among those covered by the Labor Act.

The proceeding was Electric Railway Docket No. 21, and the division's report represented the view of Commissioners Miller and Mitchell. The dissent of Commissioner Cross was noted.

ORGANIZATIONS

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—Lawrence Wilcox, Room 827, 80 E. Jackson Blvd., Chicago 4, Ill. Annual meeting, September 19-22, 1949, Hotel Sherman, Chicago, Ill.

ALLIED RAILWAY SUPPLY ASSOCIATION.—C. F. Weil, American Brake Shoe Company, 6th floor, 109 N. Wabash Ave., Chicago, Ill. Exhibit in conjunction with the meeting of the Coordinated Railroad Mechanical Associations, September 19-22, 1949, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF BAGGAGE TRAFFIC MANAGERS.—E. P. Soebbing, 1450 Railway Exchange Bldg., St. Louis 1, Mo. Annual Meeting, September 27-29, 1949, Seattle Wash.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC AGENTS.—C. A. Melin, P. O. Box 5025, Cleveland 1, O. Annual meeting, September 26-28, 1949, George Vanderbilt Hotel, Asheville, N. C.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C.R.R. of N. J., 143 Liberty St., New York 6, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elsie La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elsie La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, September 12-14, 1949, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York 6, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—W. A. Kleunder, Chicago & Northwestern Railway, St. Paul, Minn.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. An-

Safeguard

Rolling Stock, Bridges, Tanks, Towers Metal Buildings, Signal Equipment and Other Properties Against COSTLY RUST!

Nothing equals Rust-Oleum —*the proved rust preventive* —for the lasting protection of metal—especially in closed or inaccessible areas where condensation due to temperature changes breeds rust.

RUST-OLEUM

Stops Rust!

- Rust-Oleum cuts preparation time. No sandblasting or chemical cleaners are necessary.
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- Easy to use — Rust-Oleum assures lasting protection that resists rust-producing conditions.
- Apply by brush, dip or spray . . . in less time. Also available in small container sizes for economical distribution and field use.

Day and night—twenty-four hours a day—rust attacks railroad properties. Stop its deadly ravages by providing Rust-Oleum protection. Rust-Oleum coats metal with a tough, pliable moistureproof film that lasts years longer. *It's the proved answer to many rust problems.*

Rust-Oleum can be applied effectively and economically on all metal surfaces now in service—even where rust has already started. Merely wire-brush to remove scale and loose rust. Rust-Oleum merges the remaining rust into a rust-resisting, durable coating that defies time and the elements.

Save time and labor. Avoid frequent and costly replacements. Protect your properties with Rust-Oleum. Specify Rust-Oleum on new equipment, for re-building jobs . . . and for maintenance.

Get the facts now! Write for catalog containing complete information and recommended applications. Tell us your specific rust problems and we will gladly send you definite suggestions for Rust-Oleum applications.

RUST-OLEUM Corporation

2415 Oakton Street Evanston, Illinois

nual meeting, March 14-16, 1950, Palmer House, Chicago, Ill.

American Railway Magazine Editors' Association.—Hugh L. Fitts, Missouri Pacific Magazine, 1400 M. P. Bldg., St. Louis 3, Mo. Annual meeting, November 2-4, 1949, Gunter Hotel, San Antonio, Tex.

American Short Line Railroad Association.—C. E. Huntley, 2000 Massachusetts Ave., N. W., Washington 6, D. C. Annual meeting, September 27-28, 1949, Hotel Mansion, Chicago, Ill.

American Society for Testing Materials.—R. J. Painter, Asst. Secretary, 1916 Race St., Philadelphia 3, Pa.

American Society of Mechanical Engineers.—C. E. Davies, 29 W. 39th St., New York 18, N. Y.

Railroad Division.—E. L. Woodward, Railway Mechanical Engineer, 79 W. Monroe St., Chicago 3, Ill.

American Wood-Preservers' Association.—H. L. Dawson, 1427 Eye St., N. W., Washington 5, D. C. Annual meeting, April 25-27, 1950, Houston, Tex.

Associated Traffic Clubs of America, Inc.—R. A. Ellison, Cincinnati Chamber of Commerce, 1203 C. of C. Bldg., Cincinnati 2, O.

Association of American Railroad Dining Car Officers.—W. F. Ziervogel, 605 S. Ranken Ave., St. Louis 3, Mo. Annual meeting, October 4-6, 1949, Miami, Fla.

Association of American Railroads.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Operations and Maintenance Department.—J. H. Aydelott, Vice-President, Transportation Bldg., Washington 6, D. C.

Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5, Ill.

Communications Section.—A. H. Grothmann, 30 Vesey St., New York 7, N. Y. Annual meeting, September 27-29, 1949, Wentworth By-the-Sea Hotel, Portsmouth, N. H.

Fire Protection and Insurance Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, October 18-20, 1949, Ambassador Hotel, Atlantic City, N. J.

Freight Station Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill.

Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 14-16, 1950, Palmer House, Chicago, Ill.

Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, September 22, 1949, La Salle Hotel, Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York 7, N. Y. Annual meeting, September 12-14, 1949, Edgewater Beach Hotel, Chicago, Ill.

Mechanical Division.—Arthur C. Browning, 59 E. Van Buren St., Chicago 5, Ill.

Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, September 20-21, 1949, La Salle Hotel, Chicago, Ill.

Purchases and Stores Division.—W. J. Farrell (Executive Vice-Chairman), Transportation Bldg., Washington 6, D. C.

Freight Claim Division.—C. C. Beauprie, 59 E. Van Buren St., Chicago 5, Ill.

Motor Transport Division.—Transportation Bldg., Washington 6, D. C.

Car Service Division.—Arthur H. Gass, Chairman, Transportation Bldg., Washington 6, D. C.

Finance Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington 6, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C. Annual meeting, October 26-28, 1949, General Oglethorpe Hotel, Savannah, Ga.

Traffic Department.—Walter J. Kelly, Traffic Officer, Transportation Bldg., Washington 6, D. C.

Association of Railroad Advertising Managers.—Samuel E. McKay, Baltimore & Ohio R. R., Grand Central Station, Chicago 7, Ill.

Association of Railway Claim Agents.—F. L. Johnson, Gulf, Mobile & Ohio R. R., 104 St. Francis St., Mobile 13, Ala. Annual meeting, 1950, Kansas City, Mo.

Bridge and Building Supply Men's Association.—E. C. Gunther, Duff-Norton Mfg. Co., 122 S. Michigan Ave., Chicago 3, Ill.

Canadian Railway Club.—C. R. Crook, 4415 Marcil Ave., N. D. G., Montreal 28, Que. Regular meetings second Monday of each month, except June, July and August, Mount Royal Hotel, Montreal, Que.

Car Department Association of St. Louis.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis 3, Mo. Regular meetings, fourth Tuesday of each month, except June, July and August, Hotel DeSoto, St. Louis, Mo.

Car Department Officers' Association.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31, Ill. Annual meeting, September 19-22, 1949, Hotel Sherman, Chicago, Ill.

Car Foremen's Association of Chicago.—J. A. Dinges, Union Tank Car Company, 228 N. LaSalle St., Chicago 1, Ill. Regular meetings, second Monday of each month except June, July and August, LaSalle Hotel, Chicago, Ill.

Central Railway Club of Buffalo.—R. E. Mann, Hotel Statler, McKinley Square, Buffalo 5, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

Chicago Luncheon Club of Military Railway Service Veterans.—Col. R. O. Jensen, Schiller Park, Ill. Luncheon second Wednesday of each month, Chicago Traffic Club, Palmer House, Chicago, Ill.

Coordinated Railroad Mechanical Associations.—C. F. Weil, American Brake Shoe Company, 6th floor, 109 N. Wabash Ave., Chicago 2, Ill. Annual meeting, September 19-22, 1949, Hotel Sherman, Chicago, Ill.

Eastern Association of Car Service Officers.—H. J. Hawthorne, Union Railroad, East Pittsburgh, Pa.

Eastern Car Foreman's Association.—W. P. Dizard, 30 Church St., New York 7, N. Y. Regular meetings, second Friday of January, February (Annual Dinner), March, April, May, October and November, 29 W. 39th St., New York, N. Y.

Locomotive Maintenance Officers' Association.—C. M. Lipscomb, 1721 Parker St., North Little Rock, Ark. Annual meeting, September 19-22, 1949, Hotel Sherman, Chicago, Ill.

Maintenenance of Way Club of Chicago.—E. C. Patterson, 400 W. Madison St., Chicago 6, Ill. Regular meetings, fourth Monday of each month, October through April, inclusive, except December, when the third Monday, at Eitel's Restaurant, Field Bldg.

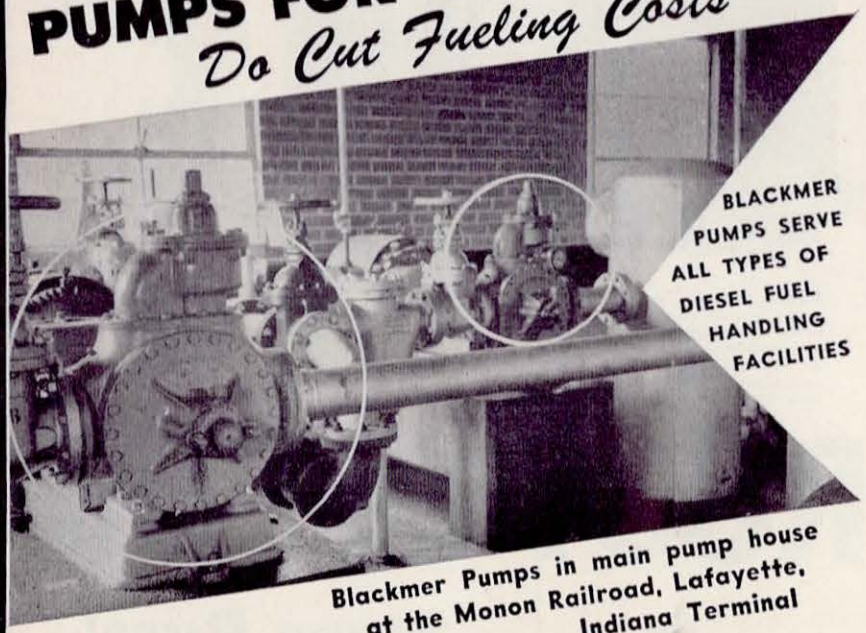
Master Boiler Makers' Association.—A. F. Stiglmeier, 29 Parkwood St., Albany 3, N. Y. Annual meeting, September 19-22, 1949, Hotel Sherman, Chicago, Ill.

Metropolitan Maintenance of Way Club.—Walter L. Turner, Jr., Simmons-Boardman Publishing Corp., 30 Church St., New York 7, N. Y. Meets in October, December, February and April.

Military Railway Service Veterans.—S. Thomson, 1061 W. Sheridan Road, Chicago 40, Ill.

National Association of Railroad and Utilities

BLACKMER PUMPS FOR DIESEL FUEL
Do Cut Fueling Costs



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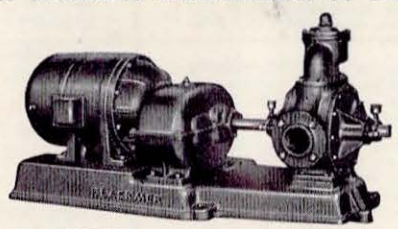
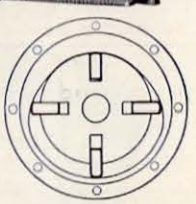


Swinging Vanes



Sliding Vanes

Write for Bulletin 307 "FACTS ABOUT ROTARY PUMPS"

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NATIONAL DEFENSE TRANSPORTATION ASSOCIATION.—Miss Lois E. Casavant, 930 F. St., N. W., Washington 4, D. C. Annual meeting, October 3-5, 1949 (tentative), Henry Grady Hotel, Atlanta, Ga.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE.—Edward F. Lacey, Suite 450, Munsey Bldg., Washington 4, D. C. Annual meeting, November 17-18, 1949, Palmer House, Chicago, Ill.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—R. B. Fisher, 59 E. Van Buren St., Chicago 5, Ill.

NATIONAL SAFETY COUNCIL, RAILROAD SECTION.—J. R. Thexton, Delaware, Lackawanna & Western R.R. Co., Hoboken, N. J. Annual meeting, October 25-27, 1949, probably at the Hotel Morrison, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—William M. McCombs, 35 Lewis Wharf, Boston 10, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Vendome, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York 7, N. Y. Regular meetings, third Thursday of each month, except June, July, August and September and December, 29 W. 39th St., New York, N. Y.

NORTHWEST CARMEN'S ASSOCIATION.—E. N. Myers, Minnesota Transfer Ry., 1434 Iowa Ave., W., St. Paul 4, Minn. Regular meetings, first Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

NORTHWEST LOCOMOTIVE ASSOCIATION.—R. M. Wigfield, Northern Pacific Ry., Room 1134, G. O. Bldg., St. Paul 1, Minn. Regular meetings, third Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

PACIFIC RAILWAY CLUB.—S. E. Byler, 121 E. Sixth St., Los Angeles 14, Cal. Regular meetings, second Thursday of each alternate month at Palace Hotel, San Francisco, Cal., and Hotel Biltmore, Los Angeles, Cal.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago 3, Ill. Annual meeting and dinner, November 18, 1949, Stevens Hotel, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 445-447 N. La Salle St., Chicago 10, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. LaSalle St., Chicago 4, Ill. Annual meeting, September 19-22, 1949, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—A. W. Brown, 60 E. 42nd St., New York 17, N. Y.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with Communications Section of A.A.R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 610 Shell Bldg., St. Louis 3, Mo. Annual meeting, September 12-14, 1949, Peabody Hotel, Memphis, Tenn.

ROADMASTERS AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elsie La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, September 12-14, 1949, Hotel Stevens, Chicago, Ill.

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UNITED ASSOCIATION OF RAILROAD VETERANS.—Roy E. Collins, 225 Bidwell Ave., Westerleigh, Staten Island 2, N. Y. Annual meeting, October 8-9, 1949, Hotel Roanoke, Roanoke, Va.

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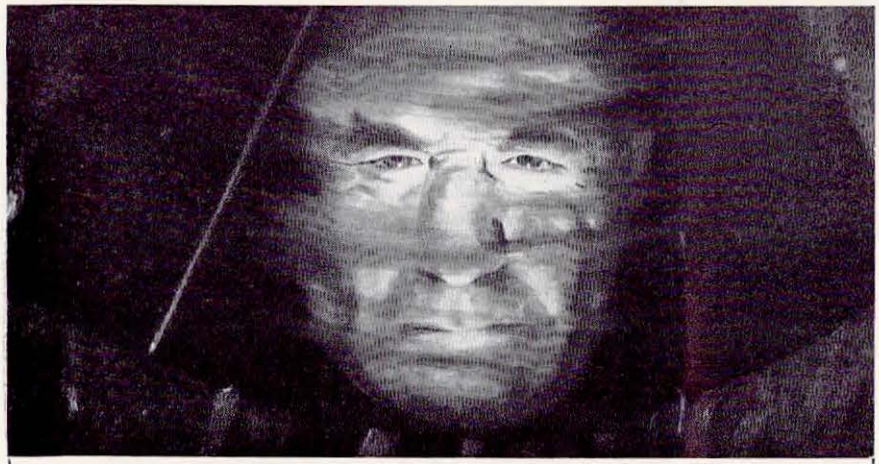

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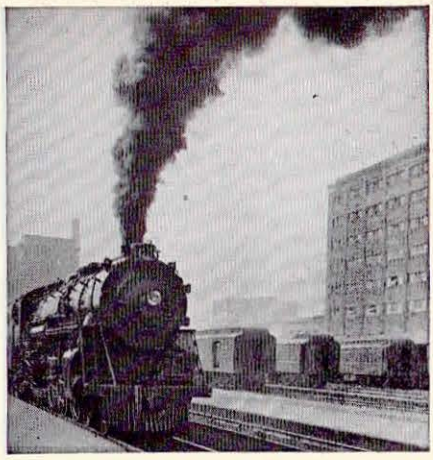

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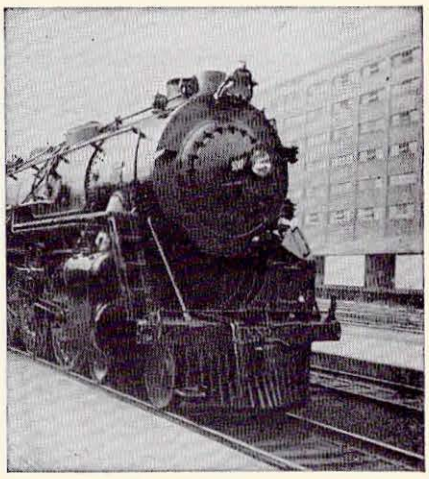

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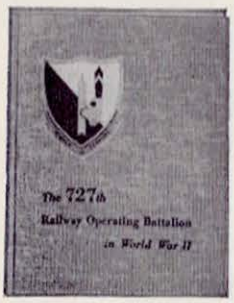

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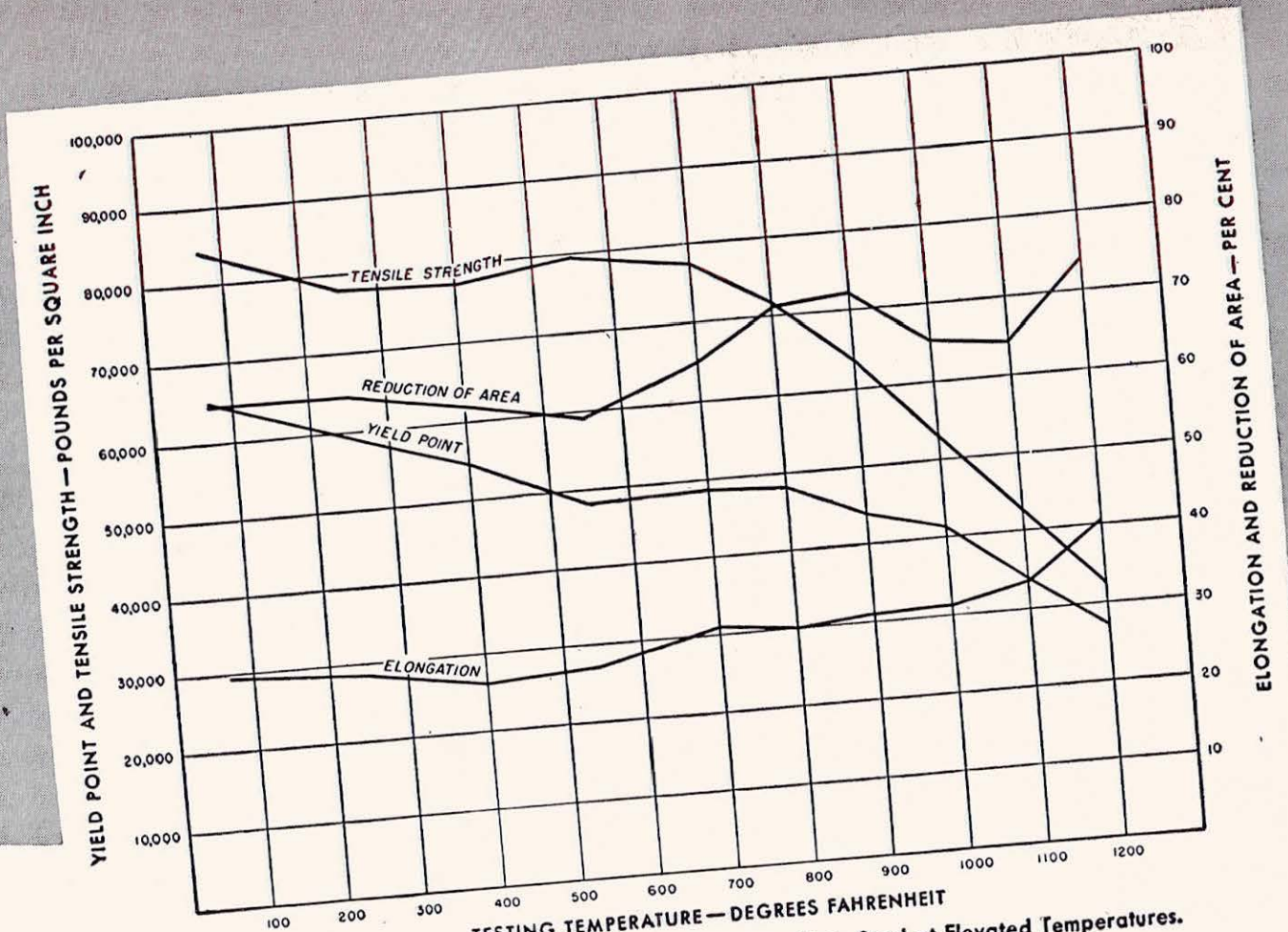

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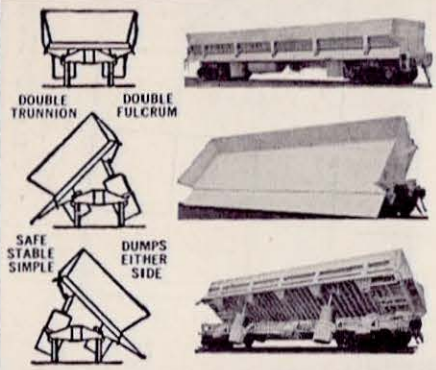

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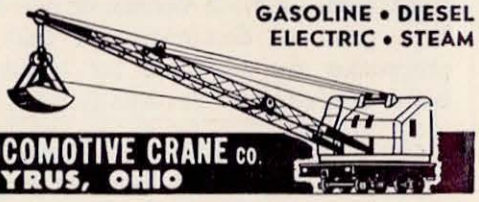

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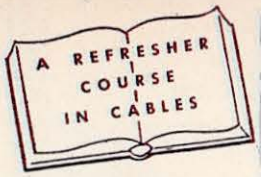

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Attorney-Examiner, Interstate Commerce Commission

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CONTENTS

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Between 1940 and 1948, purchases of electrical products by the railroads jumped from $40 millions to $196 millions, or nearly 400 per cent. . . . And purchases this year are expected to set a new record.

This information comes from a just-completed tabulation made by our Research Department which gives detailed statistics on railway expenditures for electrical products for each year 1940-1948

This study reveals that the increase in purchases of electrical products during the years 1940-1948 has been so rapid as to literally multiply selling opportunities for manufacturers.

Largely responsible for this growth is the Diesel-electric locomotive. Traction motors and generators on Diesel locomotives today have a total kilowatt capacity half that of the nation's central power stations —an indication of the size of the present railway electric maintenance job for Diesel locomotives alone. In addition, increased use of electrical equipment in every branch of railroading is making further contributions to the rapidly growing railway electrical market.

Copies of the above-mentioned tabulation of electrical purchases are available for the asking. Write to Research Department, Simmons-Boardman Publishing Corp., 30 Church St., New York 7, N. Y.

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Kerite customers have brought their problems to us for 90 years. And we have done our best to solve them. That keeps us young. And it keeps our customers coming back. As long as people do bring us their problems, we have a Fountain of Youth. We think that is as it should be. We will continue solving problems just as long as we can.

One problem that was solved a long time ago was that of developing an insulation that would stand-up-no-matter-what. Mr. A. G. Day solved that one back in the 1860's when he developed Kerite. We can show you samples of Kerite cable more than 50 years old that are still in first-class condition! The Kerite we build today uses the same formula. It is just about the longest-lasting, most economical insulation around. It stays young, too! The Kerite Company, 30 Church Street, New York 7, N. Y.

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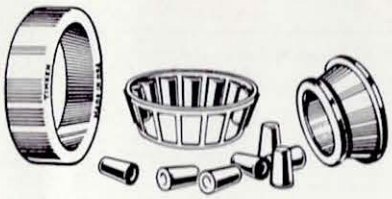

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2. Hard on the outside—tough on the inside! Rolls and races are made of the finest steel ever developed for railroad roller bearings—our own Timken fine alloy steel. It is case-carburized to give a hard, wear resistant surface, combined with a tough inner core to withstand shock.

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9. Use either oil or grease! Closures are designed to effectively retain either.

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11. Special axle length tolerances not required! No need to pay machining extras for close tolerances.

No other bearing so fully proved!

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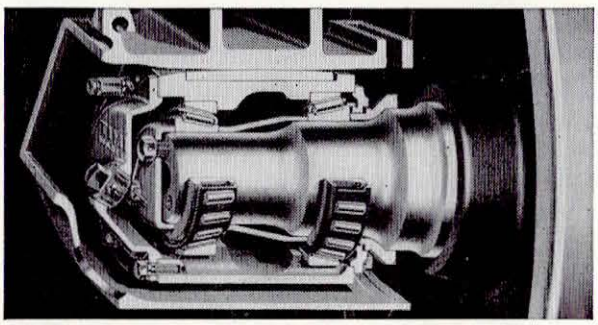

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